COAL AGE

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A Real Test of Good Faith

DOES the coal operator really object to having made public the cost of producing coal and the profits of doing business or does he just object to the activities of the Federal Trade Commission in this regard? Almost simultaneous with the statement of Colonel Wentz that the National Coal Association would attempt to collect data on investment, cost of production and selling and sales realizations for this year, by months, from coal-operator members of the association comes the announcement of the Federal Trade Commission that until the matter of its legal power has been finally determined by the Supreme Court no further attempt will be made on the part of the Government to obtain statistics of that nature.

The response of the coal operators to the announced program of their national officers for these statistics will therefore be a real test of the good faith and the public expression of their asserted policy to lay their cards on the table. So far the Government reports have shown no startling figures of profits in the production of coal, but the number of coal operators who have volunteered these data was so small in the second quarter of the year that no one can truthfully say they represent the industry.

It is entirely possible for the National Coal Association to get cost and sales information representing two-thirds of the total production, or a practical majority of the coal marketed commercially. Such data, while perhaps not carrying with the public the weight of Government figures, will do much to answer the critics who, knowing only of $10 coal, imagine all producers are reaping profits of $5 or more a ton on their product.

Whether these reports are made through local associations or direct to the Washington office of the National Coal Association, they should be comprehensive, complete and prompt.

What Will Congress Do?

ARE Senators Calder and Edge bluffing when they say that they will introduce legislation to control the price of coal if it does not fall sufficiently to suit them by the time Congress convenes? What is their idea of how low the price should be? What form will this legislation take? Is Senator Frelinghuysen coming back this session with his coal commissioner bill? What are the prospects for regulatory legislation at this Congress and at the special session that it seems likely will be called after March 4?

This is the general tenor of the questions that are going the rounds as Dec. 1 approaches. The very fact that the coal man is asking these questions is an admission that the conduct of the coal business this year has been such as to warrant such expectations. The coal industry has laid itself open to the serious charges of profiteering and wilful disregard of contract obligations. The fact that all have not been guilty does not remove the reproach, but makes harder the position of those who have travelled most carefully the straight and narrow path of reasonable prices and careful observance of their contracts.

It is unavoidable that the question of high prices for coal should be aired on the floor of the next Congress. Our nine-foot shelf of printed hearings on coal before congressional committees will be materially added to as the winter progresses. What will be said will not all be purely for political effect, for there are those who have readily come to the belief that the public needs Federal protection from the coal man and others will be heard whose grievance is that for the time they have lost the strangle hold they had for years on the coal industry and will seek to re-establish conditions wherein they could dictate the price they paid for coal.

It is important not to appraise too lightly the possible effect of that kind of thinking which believes the way to correct abuses in the marketing of coal is to pass laws. There are two ways to meet this sort of proposal: the Indiana way and the Alabama way. When state legislation inimical to the coal man was proposed in Indiana it was fought and is still being fought by every means at the command of the industry. In that state the issue is plainly defined and nothing but the word of the court of last resort will satisfy either party and end the controversy. In Alabama the operators sensed the temper of the people and the Governor, and recognizing the elements of justice in their beliefs met them more than half way. What the people of Alabama wanted was not legislation but coal at reasonable prices, and the coal men have co-operated in giving them what they asked. It is true that legislation was adopted in Alabama as stringent as that adopted by Indiana, but the officials in the Southern state have never been obliged to use it and the relations between the coal industry in that state and the public have been maintained on an amicable basis.

It is our present belief that Congress will do a great deal—of talking and investigating. The solid men of this country do not want more, but less, of Federal interference with private business, and common sense will prevail. What is needed is not prices fixed by the Government, but a better code of business ethics fixed by the industry itself. Interest in legislation hostile to the coal industry will lag in proportion as the need for it decreases—as prices go down and supply becomes better. Therefore the "if" in Senator Calder's threat.. We believe the coal industry is going before the several congressional investigating committees this winter and admit the abuses that have stained its record in this and past years and is going to say to Congress, "These things are true. A majority of the trade have been square; a few have not. Do not judge

us by their actions, but rather ferret out those who have been guilty and publicly brand them. We cannot defend them."

Unless the coal industry goes before the public through its Congress next year with all cards laid on the table and meets Congress more than half way the result will be more than an investigation. It may be anything from what in itself is innocuous—a "coal commissioner" bill—to a coal controller.

Enlightening the Domestic Consumer

ANTHRACITE prices have been added to the list of those that will be governed by fair-price committee action. It is reported that J. F. Bermingham, president of the D., L. & W. Coal Co., will direct the move to induce to be more reasonable in his charges the producer or shipper who has been selling anthracite to retail dealers at such prices as make it cost the consumer $16 to $20. When the retail dealer passes on such high prices to the householder more damage is done the coal industry than any sales at high prices to steam-coal users. In the East, where there are more representatives in Congress to the square mile of state than in the West, anthracite is almost the only domestic fuel, and the majority of newspaper readers associate stories of coal robbers and profiteers with anthracite.

It appears that the large companies have descended from their aloof position and are taking an active interest in helping to put down the price the other fellow is charging. It is always difficult to keep the laymen clear on the different phases of the coal question and Mr. Ordinary Citizen is somewhat puzzled by what appear to be conflicting statements of the National Coal Association, that price is going down, and of his coal dealer, that he cannot get coal at any price.

The production and the price of anthracite are not and have not been dependent on car supply. Therefore the improvement in railroad movement that has made possible increased production and decreased price of bituminous coal has in no way altered or affected the supply and price of anthracite.

Conservation in Equipment

A PROSPEROUS country is that one that cannot show any machinery that has been in operation for as long as fifty years; a more prosperous one would be a country that discards its old equipment every twenty years. Every nation should have a museum as an old ladies' home for the reception of historic machinery. The wrong place for such relics is the factory or the mine, unless the relics of the past are allowed to acquire a mantle of ivy or a protecting coating of moss.

Too often a historic, or near-historic, machine is kept at work, destroying efficiency, wasting energy and requiring frequent repair. Perhaps it is fortunate that spare parts are no longer obtainable for these monuments of antiquity. The practice of manufacturers of destroying their patterns after the machinery for which they are made is out of date is as valuable in preventing wasteful adherence to antiquated models as the statute of limitations is in preventing the keeping of moldering files. The slow past is dead; let it die. New men, new models, new methods now rule the world.

The old equipment does the work perhaps, but how? With loss of time, as a constant source of worry, inefficiently, unprofitably, uncertainly, inadequately. The thousands of mules, the ancient mine cars—heavy yet unsafe, cumbersome but of inadequate capacity—the puny steam shovels, and the small-capacity dump cars are all evidences that we break slowly with the past just to save the expense of purchasing, or because we dread to face boldly an unwelcome issue. Many a concern has yearly deficits and believes itself unable to operate profitably, when by the practice of modern methods it could set itself in the list of dividend payers in both fortunate and unfortunate trade periods.

Railroad Fuel Again

IT IS surprising how diverse may be the achievements with different individuals under the same set of conditions. The first public admission of an emergency in coal this year was the decision of the Interstate Commerce Commission on April 15 that the situation had become so critical that assigned cars were necessary to enable the railroads to obtain their supply of fuel coal. More recently the commission issued Service Order No. 18, which provides assigned cars for railroad fuel only in those instances where the contract between the railroad and the coal-mine operator covers the entire output of a mine or mines from Nov. 1 to April 1 or for any six-months period. Irrespective of the theoretical merits of the assigned-car practice the operators and the railroads promptly rearranged their contracts on this new basis.

An opinion as to whether or not an emergency exists today which warrants the exercise of emergency provisions in the Transportation Act in order to protect the fuel supply of the railroads depends upon whether or not one is judging the case by the policy of the B. & O. or of the New Haven, to cite but two examples. At various times in the last two weeks the B. & O. has confiscated for fuel as many as fifty cars of coal per day at the mine, prior to billing. Officials of this road are reported to have declared that this action was necessary because they could not obtain coal otherwise and they prefer to confiscate before billing in order to leave with the operator the responsibility of deciding which of his contract customers should be curtailed. All of which would indicate that an emergency exists so far as the B. & O. fuel coal supply is concerned.

On the other hand, it is reported that officials of the New Haven R.R. have quite recently advised some of the producers of coal with whom they have contracts providing for assigned cars under Service Order No. 18 that they will not require the coal. The inference is plain enough that the New Haven overbought and is now picking and choosing in order to release off-grade or high-priced coal.

Between the two extremes are such roads as the New York Central, regarding which seldom, if ever, is there any question raised regarding its fuel coal supply, either by purchase or confiscation. Years ago in the Middle West the railroads and the coal operators worked out mutually satisfactory arrangements by which all share alike in the burden and responsibility when there is such, and the benefit at other times of railroad fuel business. When all the fuss over the railroad-fuel problem is sifted down it is found to be of quite local dimensions. A few railroads and comparatively few operators have been injecting the problems of their business relations into the national fuel situation.

State Coal Mine Is Shipping 200 Tons Daily

The Claremont mine, purchased last summer by the State of South Dakota upon recommendation of the committee appointed to investigate the advisability of the state entering the coal-mining business and thus protecting as far as possible citizens of the state against coal shortage, is now shipping coal to South Dakota points at the rate of approximately 200 tons daily.

Coal Operators Open Ellis Island Office to Get Labor

Pennsylvania coal operators are so anxious to get some of the Spanish and Portuguese labor that is arriving in the United States now that they have established an office on Ellis Island to give information about the wages and conditions of working in the coal mines to newly-arrived aliens.

Traffic League President Asks Railroads to Play Fair

W. H. Chandler, of Boston, president of the National Industrial Traffic League, speaking at a meeting of the traffic group of the National Retail Dry Goods Association, said that the success of the railroads under private ownership was the wish of all business interests. "But," he added, "we don't want to be knifed while acting as friends. There are plenty of cars in the country to carry all of its business if they are handled properly. It isn't fair to charge the shipper demurrage on one hand while the railroads themselves on the other, reserve the right to hold the car on side tracks for thirty days."

Mining Society Makes Annual Presentation of Medals

The annual dinner and medal presentation of the Mining and Metallurgical Engineers Society of America was held at the Hotel Commodore, New York City, Nov. 10. The gold medal of the society was awarded to E. A. Cappeles Smith for distinguished service in hydrometallurgy. More than 150 members and their guests attended the dinner, which was presided over by E. P. Matthewson. The speakers in addition to Mr. Matthewson were Dr. Arthur L. Walker and Harry S. Guggenheim.

Illinois Coal Men Denied Injunction in Conspiracy Case

Illinois coal men, defendants in the coal conspiracy cases in the U. S. court at Indianapolis, lost their case in the Federal Court at Peoria, Ill., Nov. 8, in which they sought to enjoin officers of the Government from removing and prosecuting them in Indianapolis, on the ground section 9 of the Lever Act was unconstitutional. Judge Louis Fitzhenry filed his opinion in the case of the Hillsboro Coal Co., where Rice Miller and Herman C. Perry, two of the Indianapolis defendants, are affected, holding that section 9 of the act is constitutional and valid and that the Attorney-General and U S. Attorneys are acting within their powers. He also holds that this statute is aimed at all conspiracies to enhance the price of coal within or without the coal industry.

B. & O. to Lay Off More Men

That about ninety men were to be laid off at the Mount Clare shops of the Baltimore & Ohio R.R. by Nov. 16 was decided Nov. 8. Nearly 150 men were discharged a week previous. The layoff, it is said by officials, is due to a natural dullness, which may last but a short time. Much of the equipment that was in bad condition following wartime operations has been put back into first-class shape and the shops now have to deal only with routine repairs.

NEWS BRIEFS

Terse Items Chronicling Events of Interest to the Industry

Delays Trial of Tennessee Coal Operators Under Lever Act

Federal Judge E. T. Hanford, of the Federal District Court of Tennessee, announced Nov. 8 that he would not try any case arising under the Lever Act until the Supreme Court upheld its constitutionality. This is construed to mean that east Tennessee coal operators whom the Government has caused to be indicted for alleged profiteering will not be tried at this term of court.

Ingot Production During October Close to Record

Production of steel ingots during October, as reported by companies making 85 per cent of the total production of the country, was 3,015,982 gross tons. This is the largest of any month this year with the exception of March, when production was 3,299,049 tons. The September production was 2,999,551 tons. The total for the ten months ended with October is 29,453,217 tons.

W. B. Colver Condemns Bad Trade Practices

William B. Colver, of Washington, former member of the Federal Trade Commission, in an address at the annual convention of the National Coffee Roasters' Association at St. Louis Nov. 11, attacked "commercial bribery," asserting that its abolition would effect a saving to the distributer, and consequently reduce prices or make advances unnecessary. This practice, which he described as paying specified percentages of the purchase price of commodities to employees whose recommendations practically controlled the buying for their firms, "has been and is still deplorably prevalent in some industries," the speaker asserted.

I. C. C. Chairman Says Rail Control Will Continue

America will never again have private control and operation of railroads unaccompanied by state and federal regulation, Chairman Clark of the Interstate Commerce Commission declared Nov. 9 in an address to the National Association of Railway and Public Utilities Commissioners. "Even if we shall come to government ownership and operation," added Mr. Clark, "the necessity for a separate tribunal with jurisdiction to determine questions of reasonableness of charges and alleged discriminations will be present."

Stolen Securities in Coal Car

In clearing out an empty coal car at Terre Haute, Ind., prior to reloading at mines sacks were discovered which contained $62,000 worth of bonds, checks, notes and other papers stolen recently from the Farmers' State Bank at Newark, Ill. The papers were taken on Oct. 13 and the contents of the bags were badly rainsoaked when found.

Uniform System of Accounting Sought for Utilities

Many important problems growing out of the public regulation of utilities were reported upon and discussed at the thirty-second annual convention of the National Association of Railway and Utilities Commissioners which met in Washington Nov. 9. James Blaine Walker, secretary of the association, said that the association had been at work for several years to obtain a standard form of accounting for all of the utilities of the country, and that O. O. Calderhead, head of the Committee on Statistics and Accounts, had evolved a uniform system of accounting for gas and electric companies which will become the standard if the convention adopts it. Car service and demurrage also were scheduled for discussion.

Hand Picking the Larger Sizes of Anthracite

Although mechanical contrivances—jigs, spirals, and various "pickers"—have done much to decrease the labor employed in anthracite preparation, yet hand picking still survives at certain points. The illustration here presented shows the pickers at work at the top of the breaker removing slate from the larger sizes after the first screening.

Of course the proper place for slate is in the gob, and it is the constant effort of miners and mine officials, at least in the more gently pitching seams, to prevent it from reaching the light of day. Some of it, however, unavoidably finds its way to the breaker. If the coal and slate were not separated and the entire mine product sent to the rolls, it would be necessary to pass the entire product through the jigs. The slate and combined coal and slate is accordingly carefully removed, the former going to the rock dump or being crushed for flushing, while the latter is crushed, jigged and otherwise prepared separately from the clean coal which is merely crushed and sized. This results in much economy of power and a cleaner product than would be the case were hand picking not practiced.

The old type of breaker boy—that picturesque, incorrigible, happy-go-lucky urchin that for a hundred years or thereabout was characteristic of the anthracite region—is now almost extinct—and no one mourns his disappearance. While hand picking is still practiced it is performed by men and young men while boys of the age that formerly infested the breaker and made life miserable for the unpopular foreman are in school where they belong. The foreman has "passed the buck" to the school mistress.

As Stripping Saves Coal, Deep Pits Should Be Favored by Lower Royalties

Deep Strippings Are Expensive and the Operator Who Makes Them Should Be Rewarded with at Least Some Part of the Saving in Coal They Effect, or Operators Will Feel Debarred from Engaging in Such Unprofitable Undertakings

By Dever C. Ashmead
Wilkes-Barre, Pa.

IT IS always difficult to determine whether a piece of shallow coal should be mined from the strip pit or by underground operations. The thickness of the coal and its relation to the overburden are ordinarily the determining factors in making calculations upon the advisability of stripping. Of course, other conditions must be taken into consideration, such as the character of the overlying measures and the condition in which they are found—that is, whether they are of solid rock, clay or gravel or some combination of all three.

In the beginning careful and accurate figures must be procured as to the character of the measures. These normally can be ascertained only by making cross-sections of the area in question. The Locust Mountain Coal Co., at its property near Shenandoah, Pa., made cross-sections approximately every 300 feet. It was considered that these were sufficiently close for any decided change in the character of either the measures or the overburden to be readily determinable.

Diamond Drillholes Test New-Found Deposit

Along each of these section lines diamond drillholes were sunk, the interval between them varying from 200 to 300 feet. These holes were put down to such a depth that they went through the lowest of the coal measures. Careful records were kept of the varying character of the rock that was pierced by these holes. In addition to the diamond-drill cores thus obtained other holes and test pits were sunk through the overburden down to the rock and the character of the drift was exactly determined.

Calculations were then made of the area that could be stripped at that time, still leaving a reasonable profit to the coal company. The area thus accurately determined is shown in Fig. 1 by heavy hatching. It is also shown in the cross-section, Figs, 2, 3, 4, 5 and 6, taken transversely across the proposed stripping. It will be noted in all of these sections that the measures dipped toward the south, becoming deeper and deeper in that direction. The problem presented was the determination of the depth to which these beds could profitably be stripped.

Royalty Considerations Add to Problem

Had nothing but the character of the measures themselves and their overburden been taken into account, the calculation would have been finished at this point. This was, however, by no means the only consideration, for the question of royalty then entered into the problem. It is a well-known fact that by stripping almost complete recovery of the coal bed is obtained, whereas if the same bed were mined by underground methods the recovery would not be complete.

The actual loss thus incurred depends upon a number of factors, such as the thinness of the bed, the character of the coal, the amount of water to be handled, the liability to squeeze, etc. The Locust Mountain Coal Co. considers that an 85-per cent recovery of all the coal in a bed is a good average for underground mining. Consequently the lessors would receive a greater aggregate return from the property if the coal were stripped than if it were recovered in the ordinary way.

The amount of coal recoverable at the Locust Mountain stripping at normal expense by stripping methods was determined to be 367,855 tons, necessitating the removal of the overlying strata and the measures between the Buck Mountain and the Little Rock Mountain beds, which amounted to 870,108 cu.yd. On this the lessee would receive ordinary profit such as has been realized from other strippings. The next step was to show how much more could be recovered if those portions of the bed were stripped that would cost no more for recovery than would ordinary underground mining. Had this other portion of the property been stripped under existing conditions the operator would have lost money, as the present cost of mining by that method would not permit him to make a profit on the coal mined from this property.

Depth Limits of Profitable Stripping

The area thus determined shows that together with the previous area a total of 468,399 tons of coal could be recovered by stripping, and that in order to recover this it would be necessary to remove 1,376,369 cu.yd. of overburden. In the first case it would be necessary to remove 2.35 cu.yd. of overburden for every ton of coal* recovered, but in the second, 4½ cu.yd. would have to be stripped for each additional ton of coal obtained. This large operation was quite within the bounds of reason, but, as has been stated above, it would entail a slight loss. The additional area is shown on both the map and the cross-section by light hatching.

The recovery by stripping over these two areas would amount to 468,399 tons, whereas that obtained if underground mining were followed in the second area would be only 394,441 tons. Thus 73,958 tons would be lost. The lessors would, of course, gain by having the whole area stripped, but the mining company could not do this, as it would involve a financial loss. If, on the other hand, the lessor would consent to reduce his royalty to such a point that the lessee could afford to strip the area, the owner of the coal would still make money through the stripping of the entire area, though

*Throughout this article it must be remembered that the reference is to "remove stripping," in which the overburden is removed from the pit, in contradistinction to "casting stripping," where the shovel merely casts the overburden to one side.

he would realize a reduced royalty per ton. He would thus in a way divide up some of his profits with the coal company.

Calculations in this case were carried still further. The lessee determined another area shown by broken-line hatching in the map and cross-sections. This included the region that could be stripped if the lessor were willing to reduce the royalty to such a point that his net return from the whole area would be the same as if it were operated by ordinary stripping and underground-mining methods. It was found that within this additioanl area 162,129 tons of coal would be recovered by stripping and that for every ton thus recovered it would be necessary to remove 5 cu.yd. of overburden. This coal could be recovered only by stripping at a loss if the present rates of royalty were maintained. If, however, the coal was mined from underground, a loss of 25,599 tons would occur in this area alone. Taking together the three areas above described, there would be recoverable by stripping 625,528 tons of coal, as against 535,971 tons if underground-mining methods were pursued in conjunction with normal or ordinary stripping.

All Would Gain by Royalty Concession

It can be readily seen that the lessor can well afford to reduce the rate of royalty on a portion of any given tract of coal in order that a greater recovery may be obtained. He would lose nothing by thus reducing his royalty, as the increased tonnage would be more than sufficient to make up the loss incurred on the decreased rate of royalty. Furthermore, this decrease would be an advantage to the coal company, as it would permit it to mine at a small profit a body of coal which, if worked with normal royalty, would mean a financial loss. Thus a small reduction of royalty makes a difference between operating at a profit and operating at a loss.

Not only would lessor and lessee profit by such an arrangement as that above outlined but the public also would be a gainer, inasmuch as there would be recovered approximately 100,000 tons of coal that otherwise would be wasted. Once a property is mined, the recovery of any coal left in the pillars becomes extremely difficult. The minable areas of anthracite in this country are not sufficiently extensive to warrant the abandonment of any such amount of coal nor is it fair to make the lessee mine coal at a loss when the lessor could, without any loss whatever, reduce his royalty to a point where he would receive the same net income from his property as when mined by either method.

The balance of the coal shown on the cross-sections of the measures in this end of the property cannot be stripped, as it lies too far beneath the surface. It probably could not be profitably worked by stripping, no matter how far the lessor might reduce the royalty.

Coal-Land Owner Can Strip Heavy Cover

Some other figures in connection with this stripping may be of interest. This is particularly true of ratios existing between the coal and the amount of overburden. In the heavily-hatched area the company can afford to strip, as the relation between the overburden and the coal is two and one-half to one. This is a paying proposition. The critical or dividing point between stripping and underground mining, so far as the stripper is concerned, is the condition where the ratio of total overburden to coal is about three to one. This is the condition reached in the combined areas shown by heavy and light hatching lines. The lessee, however, could not afford to strip the average of the three areas shown by the heavy, the light and the broken-line hatching unless some reduction was made in the royalty rate.

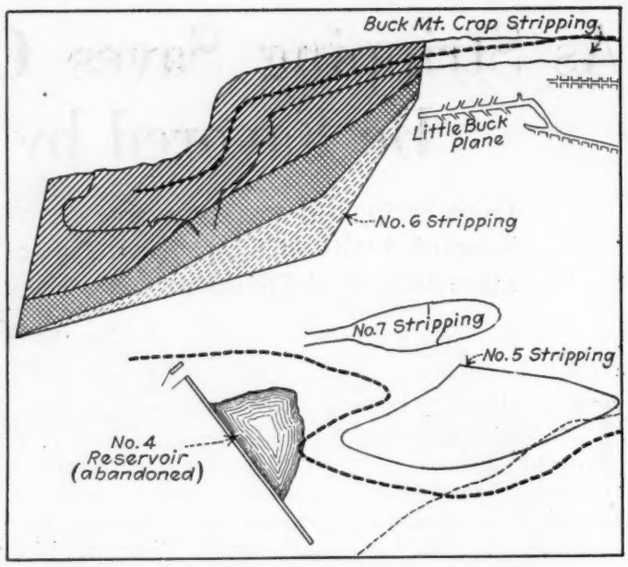


FIG. 1. PITS NOS. 5, 6 AND 7 AT WEST END OF LOCUST MOUNTAIN COAL CO.'S PROPERTY

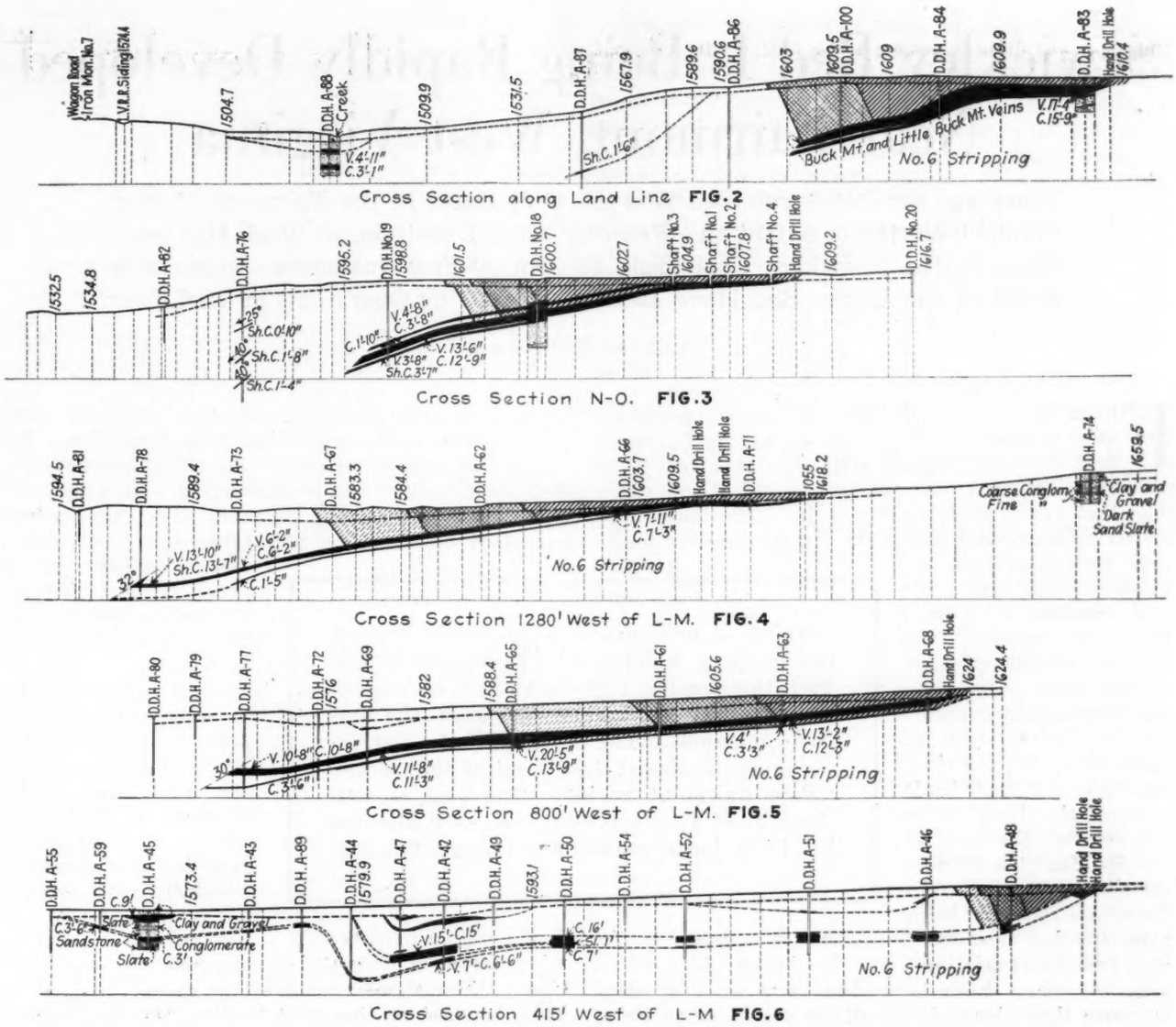
No. 6 is the largest of the three. The heavy hatching on the north, or, as shown on the plan the upper part, of the stripping shows the area which it will pay to strip. The area which is lightly hatched is that which will produce coal at the same price as it would cost to mine it by underground methods. The broken-line hatching in the southwest corner of No. 6 pit is coal that could be extracted by stripping, if the lessor would consent to figure the tonnage of coal obtainable by underground mining from that and the adjacent area, multiply it by the royalty rate and divide by the amount of coal the stripping of those areas would give and make a new royalty rate based on that figure. The new royalty would make profitable the stripping of all the coal areas hatched, either with heavy, light or with broken lines.

As has been previously stated, the overburden in the area represented by the light hatching was four and one-half to one, while in the broken-line hatched area the ratio was five to one. Neither of these areas could be stripped independently, but when taken together with the first, where the ratio is two and one-half to one, they could be profitably worked by this method, providing the arrangement outlined in reference to royalty could be made with the lessor.

It is obvious that unless there is some modification in royalties, lessees will not attempt to make the deeper strippings and that work will be left to those companies that own their own coal. Stripping has been commenced on this property, and Fig. 8 shows a No. 35-B Bucyrus caterpillar shovel at work. Already 62,781 tons of coal have been recovered and 276,553 cu.yd. of overburden have been removed. Only two beds of coal will be recovered from this portion of the operation, these being the Buck Mountain and Little Buck Mountain measures.

Pit Will Be 150 Ft. Deep at Lowest Point

On this property, besides the stripping above described, the chief interest in which centers in the methods employed to determine the practicability for the removal of coal by the stripping method, there are two other stripping operations that will be opened up soon. These are shown as strippings Nos. 4 and 5 in Fig. 1. No unusual problem will be presented by either of these latter operations, as the determination of the question of royalty will not enter into the proposition and all the overburden can be removed at a profit without any reduction in the royalty charge.



FIGS. 2, 3, 4, 5 AND 6. CROSS-SECTIONS SHOWING WHAT WORK IS LIKELY TO BE STRIPPED AND WHAT A ROYALTY REDUCTION WOULD MAKE STRIPPABLE

The slowness with which the bed sometimes dips makes the area that can be profitably mined, given a slight reduction in royalty, quite an important matter to the lessor, the operator and the public. Especially is this true in Fig. 5 where the coal thickens as it enters the third zone.

The maximum length of the largest stripping is 2,400 ft. and its maximum width about 1,000 ft. The greatest depth attained in this pit will be 150 ft., and the greatest thickness of coal will be 25 ft. 11 in. This is shown in Fig. 2, where the two Buck Mountain beds come together. In regard to size this stripping does not compare to that in the main, or east, basin, nor can it compare to several other pits in the anthracite region. The methods employed in underground mining at this property are in many ways unique, and it is hoped that soon another article will appear dealing with the problems that it involves.

Washington Wonders If It Is Short of Coal; Seeks Help in Getting Some

UPON representation of a coal committee of the District of Columbia that the coal situation in the national capital requires special consideration, due to the shortage of fuel for domestic use, the Interstate Commerce Commission has taken up with Dr. E. W. Parker, director of the Anthracite Bureau of Information, at Philadelphia, the matter of shipment of coal to Washington. Information will be sought as to whether the figures on receipts of anthracite coal in Washington correspond with those of shipments by operators, and the anthracite bureau will be requested also to outline a concrete program for getting coal shipped to the capital.

Coal Preferred for Gas Making; Present Not Auspicious Time to Install Plant

COAL as a factor in the production of gas for domestic use was considered by the Public Utilities Commission of the District of Columbia in a hearing last week on the application of the local gaslight company for an increase in the gas rate. Leon B. Eichengreen, an expert of the United Gas Improvement Co., of Philadelphia, was questioned by the commission as to the costs of making gas by coal and oil. At present Washington's gas is made from oil, otherwise known as water gas. The witness said that while gas could be manufactured more cheaply from coal than from oil, the present was not an opportune time to construct a coal plant because of high prices and uncertainty of obtaining material. Within three years, perhaps, the local company could build a coal plant. A coal plant to manufacture two billion feet of gas a year would now cost between four and five million dollars. The saving on a coal plant over oil would depend on the ability of the company to sell coke, the byproduct of coal gas.

Sewickley Bed Is Being Rapidly Developed Near Fairmont, West Virginia

Years Ago the Pittsburgh Bed Was the Only Seam in the Fairmont Region Thought Worthy of Attention—Recently Much Development Work Has Been Done in the Sewickley Coal Bed—In Not a Few Instances Appreciable Areas of the Upper Bed Have Been Destroyed by Operations in the Lower

By H. A. Williamson
Fairmont, W. Va.

From the time that the first coal-mining operations were started in what is known as the Fairmont field of West Virginia until about the year 1910 little or no attention was paid to any bed of coal other than that known as the Pittsburgh. True there were scattering operations within the district in other measures, but these were not extensive and not seriously considered by operators in general, the normal condition of most of the firms attempting such developments appearing to be a state of bankruptcy. In the older purchases of coal lands most of the deeds either call for "all the coal" or simply for the "Pittsburgh coal" or "Big Vein," no attention being given to other deposits. This is easily explained by the local conditions existing. The Pittsburgh coal outcropping for many miles is worked from drift or slope openings throughout almost all the region at an elevation that is ideal for economical railroad construction and operation. This bed has greater thickness and better quality, according to all available information, than any other in the district, and consequently there was no inducement to develop any other measure.

Opening of new mines in the Sewickley bed has severely hampered the progress of the operations in the Pittsburgh bed because of the necessity of sharing with them the limited car supply. The capacity of the Sewickley mines is almost 7 per cent of that of the whole Fairmont region. The coal is well thought of as a domestic fuel, as it clinkers but little, burns readily and forms a fine ash.

When the demand for fuel was abnormally increased by the world war, many individuals with more or less knowledge of the coal business became desirous of starting mining operations, being attracted by the abnormal prices prevailing. Purchases of small coal areas for immediate development became frequent and it was only a short time until such Pittsburgh bed areas as were available were all being worked. Would-be operators then turned to the next best seam and purchases of Sewickley bed areas became the order of the day.

Growth of Development Rapid Since 1916

Up to this time the only railroad serving the Fairmont field was the Baltimore & Ohio. For some years construction of a road from Brownsville, Pa., to Fairmont, W. Va., has been under way, giving a connection with both the Pennsylvania Railroad system and the New York Central. In 1916 or thereabout some coal was shipped over this line from Monongalia County. About this time also, a railroad known as the Morgantown & Wheeling was started. It so happened that these two roads cut through the territory that carries Sewickley coal of good thickness and at an elevation above drainage that makes economical mining possible. This resulted in large purchases of Sewickley acreage along these two roads. The accompanying map graphically illustrates how completely the available acreage has been purchased by operators and prospective operators.

In a discussion of the development of this bed it is well to define immediately the area under consideration. For all practical purposes the Fairmont region may be said to lie within the borders of Harrison, Marion, Monongalia and Taylor counties, in West Virginia. Up to the present time the development of Sewickley coal may be considered as being confined within a narrow strip of land extending about five miles westward from the Monongahela and West Fork rivers (these streams marking the eastern limit of the bed), bounded on the north by the Pennsylvania-West Virginia state line and extending southwestward to the Marion-Harrison county (West Virginia) line. Reference to the accompanying map will clearly outline this.

Thickness of Bed Averages Seventy Inches

The Sewickley bed belongs to the Monongahela series and in the Fairmont region lies about 120 ft. above the Pittsburgh bed. The West Virginia Geological Survey states that its reported thickness runs as high as 12 ft. However, thicknesses of this bed stated to be in excess of 6 ft., except where thoroughly verified, can be accepted only with strong reservations. Most of the excessive thicknesses reported are from points where the coal lies under deep cover and are taken from the logs kept in drilling oil and gas wells. Such information, while given in good faith, is liable to grave error and cannot be accepted without verification.

Taking the reports from thirty-seven operating mines the average thickness of bed is 70 in. Fifteen mines report less than the average; eleven report 70 to 72 in.; five report 76 to 78 in.; three, 84 in., and three 96 in. The lowest thickness reported is 50 in., while the highest, as above stated, is 96 in. Probably 70 in. is a fair statement of the average thickness of the area under discussion, but in a detailed examination of any particular property this may be found to vary greatly within relatively short distances.

East of the Monongahela River this bed is above the hilltops—that is, denuded and lost—except possibly in a few isolated instances. To the southwest it thins out until, for all practical purposes, it may be said that at the Harrison-Marion county line it is no longer of workable thickness. Westward it passes rapidly below drainage so that at Wadestown, in the western end of Monongalia County, and at Glovers Gap, in the western end of Marion County, it is reported at a depth of from 800 to 1,200 ft. below the surface.

In character the Sewickley coal is similar to the Pittsburgh, and were it not for the limiting features of its quality it could be made to serve practically the same industrial purposes. The quality of this fuel, however, is inferior to that of the Pittsburgh and its use probably will be confined to steam production in stationary boilers, domestic consumption and as locomotive fuel.

SEWICKLEY DEVELOPMENTS IN FAIRMONT REGION

Monongalia and Marion counties, in northern West Virginia, are fast developing operations in the Sewickley bed. The coal, though not low in ash or sulphur, is a splendid domestic fuel, as it does not cinker. Convenience in the grate and ability to burn completely to ash under ordinary firing conditions are the chief desiderata in a domestic fuel.

Burns to a Fine Ash with Little Clinker

A peculiar characteristic is claimed for Sewickley coal as a domestic fuel, the following paragraph being the description given by the West Virginia State Geological Survey: "The coal has a fine reputation for domestic use among the farmers of Marion and Monongalia counties, who generally prefer it to the Pittsburgh coal below, on account of its freer burning and of the fact that it is less inclined to fuse in the grate. The coal is usually interlaminated with thin layers of mineral charcoal, and this structure causes it to burn with a bright flame, leaving only a fine ash with little clinker, although it carries more ash and sulphur than does the Pittsburgh coal below."

The coal as mined is liable to wide variations in quality. With reasonably good preparation it probably will run, on an average, 2 to 3 per cent higher in ash and a like proportion higher in sulphur than the Pittsburgh coal. Variations in quality arise in large measure from partings in the seam. At some points only two small partings are reported while at others as many as ten are said to exist, varying in thickness from ¼ to 2 in. each. Some are composed of slate and others of fire clay. These partings make proper commercial preparation difficult and in some cases impossible, while shipments running 14 per cent in ash and from 4 to 5 per cent in sulphur probably are not unusual.

A rough approximation of the difference in quality between the Pittsburgh and Sewickley coals is illustrated in Table I, the average analyses given being taken from the West Virginia Geological Survey reports.

These figures are the result of averaging the analyses of a number of samples. While much better results have been obtained and reported on Sewickley coal, such results are largely due to perfect preparation of the sample taken for analysis and could not be maintained in actual operation. The above probably is a fair average of what might be expected from shipments on orders extending over a considerable period of time.

As in quality so in appearance a wide variation occurs. The coal from some mines, or even from certain parts of the same mine, when loaded on railroad cars will have a fine appearance, comparing favorably with the Pittsburgh product. Other cars will be contaminated with fire clay and other impurities. If properly mined the coal makes good sizes and stands transportation reasonably well.

Mining conditions in the Sewickley bed may be said to be fairly advantageous. In most places the coal occurs under a sandstone roof; some slate must be handled, but not enough to be considered abnormal. The bottom is good and drainage is, as a rule, easily provided. Railroad sidings were originally constructed with convenience to the Pittsburgh coal in view, consequently in most cases it has been necessary to make special provision to get the Sewickley coal down to the proper elevation for loading into railroad cars. At some points the mine openings are as much as a half mile from the tipple to which the coal must be brought in the mine cars on an even grade; in other cases it is brought down in chutes, while at a few points it has been possible to build railroad sidings on a grade that bring the railroad cars to such

TABLE I. AVERAGE ANALYSES FROM WEST VIRGINIA GEOLOGICAL SURVEY

	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulphur	Phosphorus
Pittsburgh Coal	1.24	34.31	57.36	7.09	1.70	0.010
Sewickley Coal	1.26	36.65	50.63	11.46	4.00	0.009

an elevation that the tipple can be built to receive the coal directly from the mine opening. In a few cases shafts have been sunk to the Sewickley coal.

One of the most serious difficulties affecting the future mining of this coal measure is the working of the Pittsburgh bed below it. The interval between the beds is only about 120 ft. and wherever the Pittsburgh has been removed the Sewickley bed above it has been broken. So far as present-day mining is concerned, this, of course, completely destroys this bed. Removal of the Pittsburgh bed in most cases is controlled by companies not interested in the Sewickley, or even if they are interested in the upper seam, present-day commercial necessity requires them to overlook the destruction of the less valuable measure.

Mining in the Pittsburgh coal is so far in advance of operations in the Sewickley that it looks now as if a large portion of the upper seam will be destroyed in this manner. It is possible that where these beds go under deep cover and have not as yet been mined and are not likely to be worked for some years, an effort will be made to recover both. Where it is necessary to do shaft mining there is always an incentive to remove first the bed nearest the surface. This may in future years save a large part of the Sewickley coal. As the matter stands today there are but two or three companies carrying on mining operations in both beds with the object of recovering the highest possible percentage of both.

Another consideration that may affect the future value of this bed is the manner in which it is frequently worked. Persons with little or no knowledge of coal mining, attracted by the wildcat profits of some small operations, purchased limited areas of Sewickley coal and opened mines. Some of these have railroad facilities and some are "wagon loaders," but in every case the purchaser bought with an eye to immediate maximum production.

Consequently dozens of small mines are operating in haphazard manner at points that will be badly needed in future if proper extraction is to be obtained. In many of these mines the coal is literally gouged out. A little later these operations will be abandoned and will cave to such an extent as to make their re-opening impossible or at best a matter of excessive expense. So many of the most advantageous loading points have been occupied in this manner that future recovery of the bed may be seriously hampered and made highly expensive.

Forty-Three Mines with Railroad Tipples

The most recent available information shows thirty-seven operating mines in the Sewickley bed in Marion and Monongalia counties. This list may be augmented by the names of six other operations, not yet officially reported, making a total of forty-three mines working this bed. These figures refer only to such developments as have facilities for loading from mine cars into railroad cars. There are no figures available concerning the number of "wagon-loading," or "snow-bird," mines working in this measure.

If the figures reported by the operators are accepted these mines have an approximate capacity (not to be confused with output) of one and one-half million gross tons per year. The largest producing company has a tipple capacity of possibly 1,100 gross tons per day, while the smallest will not run over forty. In 1918 (the latest available official figures) the largest Sewickley operator in the district reported a production of about 201,000 gross tons.

Almost every condition of tipple construction and general plant equipment can be found here from the most modern to the most crude. At least one large operation is working in both the Sewickley and the Pittsburgh bed with the idea of a maximum recovery from both. The annual production of the Fairmont region from all beds of coal, will run about twelve and one-half million gross tons, according to the most recent available figures.

Referring to the accompanying table of coal production it will be noted that in 1907 only 9,538 gross tons of Sewickley coal were reported, all originating in Marion County and practically all coming from one mine. In the next year, 1908, the tonnage had increased fourfold. No further increase took place until 1914, when Marion County produced 107,209 gross tons of Sewickley coal. By 1920 this was again multiplied by four. No Sewickley coal was produced in Monongalia County prior to 1916, in which year the state reports show 19,041 gross tons. In 1920 it is estimated that this county will produce more than a half million tons of Sewickley coal, or more than the total county production from all beds in 1916.

TABLE II. COAL PRODUCTION FAIRMONT REGION, 1907 to 1920
(In Gross Tons)

	Marion County		Monongalia County		Total Production of Four Counties*
	Sewickley Coal	Total Coal	Sewickley Coal	Total Coal	
1907	9,538	3,619,764	.....	292,596	7,671,817
1908	38,533	3,440,666	.....	271,843	7,276,909
1909	25,379	3,733,765	.....	235,816	7,412,903
1910	27,273	4,210,622	.....	414,992	8,916,959
1911	20,424	4,084,822	.....	464,319	9,157,661
1912	22,618	4,833,652	.....	382,164	10,476,646
1913	30,221	5,271,441	.....	426,137	11,403,510
1914	107,209	5,830,070	.....	400,046	12,396,532
1915	119,942	5,988,879	.....	319,947	11,788,682
1916	209,755	6,189,891	19,041	501,101	12,697,352
1917	250,483	5,125,390	48,446	751,403	11,822,386
1918	424,802	4,533,466	265,064	1,687,153	12,485,590
1919	420,000*	4,400,008	450,000*	2,158,219	12,370,359
1920	430,000*	4,500,000*	570,000*	2,700,000*	12,700,000*

Note—Fiscal year ends June 30. Area included covers Harrison, Marion, Monongalia and Taylor Counties.
*Estimated.

To summarize briefly the growth in Sewickley production: In 1913 but little more than 30,000 gross tons was mined, while it is estimated that in 1920 one million tons will be produced. On the other hand the total production of coal from the region (including that from the Sewickley bed) in 1913 was about eleven and one-half million tons, while in 1920 it is estimated at about twelve and one-half million tons.

Car Allotment Rules Cause of Big Tonnage

These figures appear somewhat deceptive in regard to the relative increase in production from the Sewickley and Pittsburgh beds. It would appear that the entire increase in output from 1913 to 1920 has come from the Sewickley bed mines. In a way this is true, but not because the Pittsburgh bed is incapable of increased production. Practically all the Sewickley mines were started between 1917 and 1920, and as each new operation was opened it received a certain car allotment from railroads.

On the other hand, practically all the Pittsburgh operations had been opened prior to 1917, and far from receiving additional car allotments their percentage of cars has been decreased. Thus it has been impos-

sible to augment the production of Pittsburgh bed coal while the Sewickley production has increased with the opening of each new mine. If railroad cars were made available to all mines to their full capacity it is not likely that the Sewickley production would increase to more than one and one-half million tons, while the output of Pittsburgh bed could easily be brought to twenty million tons and probably more. Furthermore if a condition of full car supply developed it is more than probable that the Sewickley production would decrease somewhat. Full car supply would mean a decreased price of coal, which in turn would make it impossible for the Sewickley product to compete in many markets with that from the Pittsburgh bed.

As already stated, the Sewickley operations are scattered along the West Fork and Monongahela rivers all the way from Worthington (a few miles southwest of Fairmont) northeastward to within five or six miles of the Pennsylvania state line. Developments are most numerous, however, a few miles northwest of Morgantown, in Monongalia County, between Randall, a station on the Monongahela Ry. and Cassville, on a branch railroad known as the Morgantown & Wheeling. On this branch the openings are nearly all located on the crop along Scotts Run and its branches and it is sometimes referred to as the Scotts Run district. About twenty mines are to be found in this vicinity.

The Monongahela R.R., which serves the larger part of these operations, connects with both the Pennsylvania and the New York Central at Brownsville, Pa. The other mines are located on the Baltimore & Ohio and on the two spur lines of the Western Maryland Ry., which connect with it. This railroad situation is illustrated on the accompanying map.

The Last Stand of the Open Shop

In Attempting to Complete Their Organization of the Coal Fields of Southern West Virginia and of the United States in General the United Mine Workers of America Have Precipitated a Strike—The Final Outcome Will Depend Upon Human Endurance

By Roy W. Hinds
New York, N. Y.

With the approach of cold weather and heavy mountain snows the coal strike in Mingo County, West Virginia, and Pike County, Kentucky, hinges upon the ability of the strikers and their families to maintain themselves indefinitely in their tent colonies. Just now this strike presents the most complete deadlock of any industrial struggle in the country. Neither the operators nor the strikers express even the vaguest hint of yielding, and the outcome thus becomes a question of human endurance.

The strike zone, which comprises virtually all of Mingo County and the Pond Creek field across the river in Kentucky, is a one-industry community. The strikers, if they are driven from their tents by the rigors of winter, must seek more permanent abodes, and the only homes open to them are the dwellings in the mining towns. They can occupy those by the simple process of returning to work in the mines.

I recently visited the two principal tent colonies—the Lick Creek camp, two miles up the river from Williamson, and the camp near the Borderland mines, seven miles down the river. In no case did a striker or a member of his family give a hint of wavering even in the face of approaching winter, and preparations were going forward for the building of floors in the tents and otherwise getting these improvised shelters into shape for an indefinite continuation of the strike.

Five Hundred Soldiers Patrol the Field

Near the Lick Creek strikers' colony is the camp of 500 U. S. soldiers, sent into the district at the request of Governor Cornwell after the situation got beyond the control of the local authorities. Throughout the summer clashes of armed and unarmed men followed the battle at Matewan, nine miles up the river from Williamson, between strikers and Baldwin-Felts detectives, in which ten men were killed and several others wounded. Prompt indictment of the survivors followed, but their trials have been postponed from time to time because feeling is yet too bitter for a jury trial.

In the field also are organizers of the United Mine Workers of America, and it is around these men and the soldiers that the present phase of the struggle revolves.

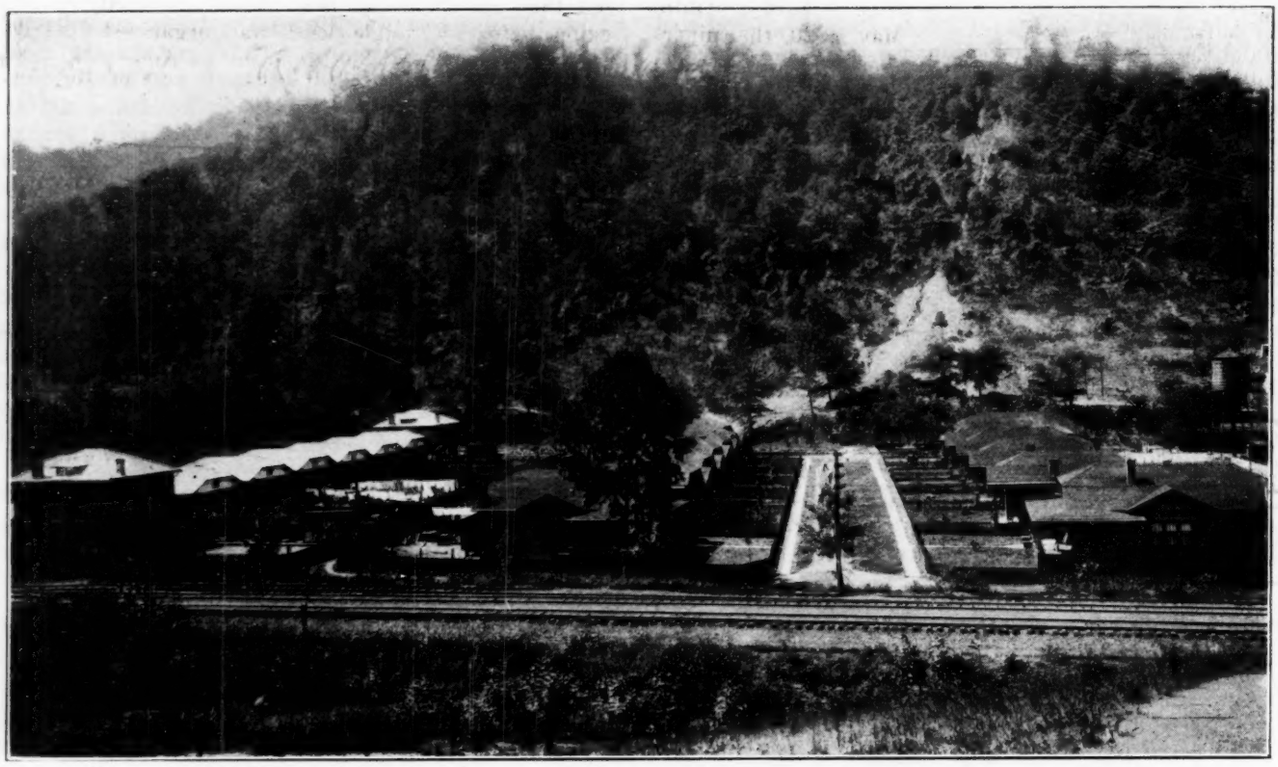
It is easy to find arguments for both sides. One hears that the tranquillity of the region was broken by the organization of local unions under the auspices of the United Mine Workers. Others say the district would have dealt effectively and without serious trouble with its own affairs if the troops had not been sent in. There is no resentment against the soldiers themselves, but there is strong indignation in some quarters against the orders which brought them there and against the moral spectacle thus presented of a community under armed guard.

Local Authorities Failed to Keep Order

The fact remains, however, that the local authorities did not preserve order. Ten men were killed in one outbreak. There were other less serious eruptions, and before the troops arrived the whole region lived in a state of fear, with murder and pillage always imminent. With the troops present the region is comparatively quiet, although it is difficult to predict at what moment the tension will reach the breaking point. No one admits that a community can continue to live under such conditions.

There are predictions that the miners will be forced to capitulate when cold weather sets in. There are other predictions that the operators will give in when they finally realize the unalterable determination of the strikers.

In a sense the situation has passed beyond the status of a mere labor difficulty. The type of miners here involved on the whole is different from that in any other coal field. They are natives of the region. The



THE GROUP OF HOUSES ARE SOME OF THE BRICK HOUSES AT BORDERLAND CAMP 1
These houses are of six rooms, equipped with electric lights and shower baths and rent for $24 a month. Some of the striking miners and their families left these houses, or were evicted, after joining the United Mine Workers and took up their abodes in tent colonies.

mining towns are steadily being repeopled through the importation of men from other districts. If this continues no jobs will be left to which the strikers can return should they ever desire to do so. They will face then the necessity of seeking work and homes in other communities. But will they depart without a struggle? Will they gradually disappear, family by family, until there are no strikers left and the strike automatically dies out, with the mines working at normal with the imported miners? Will these native families evacuate peaceably before the incoming families?

The merchants and business men of Williamson do not think so. Among these men the consensus of opinion is that open revolt is not far off. They are almost unanimous in demanding that the troops be kept in the field. Out of the first ten merchants interviewed only one wished the troops withdrawn, and this man is selling a large quantity of goods to the strikers, who, with the county and city authorities, are unremitting in demanding the removal of the soldiers. The authorities point to the presence of the troops as a reflection upon their own competency. The strikers point to them as a reflection upon their peaceable intentions.

This is the region of the old Hatfield-McCoy feud and similar interfamily strifes. It is a land in which hatred, once bred, dies hard. The mountaineer population has taken sides with or against the strikers, and the difficulty has now become a bigger proposition than any ordinary strike. It is the ranging of a community into opposing factions, and the general prediction is that if the troops are removed civil war will inevitably result, with the soldiers quickly brought back in greater force than ever.*

These predictions must be taken seriously when it is considered that the detachment of troops is fully equipped for mountain warfare. In the camp are pack mules, the safest animals for treacherous paths, with equipment for transporting machine guns and everything needed for a mountain campaign. If an outbreak should occur and it is not quickly checked no one doubts the result—guerrilla warfare.

Armed bands could roam almost at will for a considerable time among the wooded mountains, gaining sustenance and support from sympathizers. The means of warfare and the refuge of lawlessness are provided by nature herself. The mountainsides bristle with bowlders which could be sent crashing down upon mines, camps and homes. Natural forts, almost impregnable, abound along the slopes. Rifle pits and nests are perched among the crags.

No Complaint About Wages, Hours or Homes

Thus the industrial situation in this region is one of the most critical in the country. It is the outcome of an attempt by the United Mine Workers of America to unionize one of the last remaining open-shop mining districts in the country.

This field in its twenty years of coal production has achieved a remarkable position. It enjoyed twenty years of peace. Strikes were unknown. The operators, for the most part natives of the region, dealt directly with their employees, themselves natives. The field, which produced $15,000,000 worth of coal during the year preceding the strike, seemed to be isolated from the nation's general coal industry and immune from the industrial troubles that disturbed other regions. Throughout the war the unorganized parts of the West Virginia field produced their high-grade byproduct and domestic coal while the Central Competitive Field, central Pennsylvania, unionized West Virginia and the Western fields

*On Nov. 5 the battalion of Federal soldiers was removed and twenty-five troopers of the West Virginia constabulary arrived. As a result of the reduction in force at least three structures had, up to Nov. 11, been dynamited.

were being paid in wages an average of $275 a month.

At the outset of the strike in May, 1920, the miners were being paid in wages an average of $275 a month. The books of the companies establish this fact, and the strikers themselves admit it. They were living in comfortable homes renting at unusually moderate figures. Working conditions on the whole were satisfactory. The strikers, even after months of bitter dispute and controversy, have no complaint to make upon the question of wages, hours, working or living conditions. Most of them even yet are friendly with the operators and, meeting in the streets or along the roads between camps, hold friendly conversation with them. Employer and employee in this field seem to be closer together than is ordinarily the case.

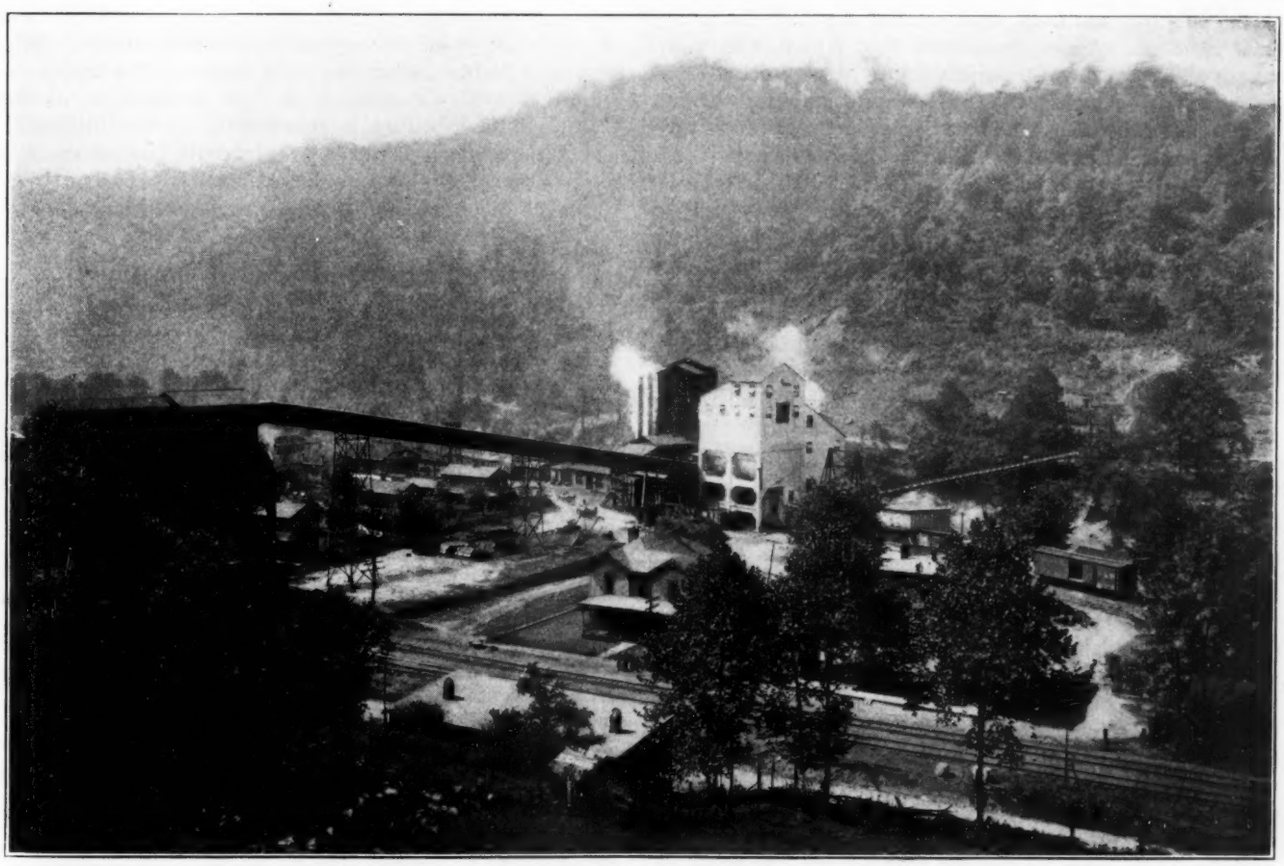
In the past any "grievances" that arose upon either side were taken up directly with the mine owners and settled satisfactorily. The operators met the workmen themselves and adjusted disputes, agreed upon wage increases or adopted measures to better working conditions. And for twenty years this method kept the peace, assured a normal production of coal and normal earnings in wages.

Then the emissaries of the United Mine Workers of America appeared upon the scene. There is a dispute as to when these men first came into the field. The organizers themselves say they came only after the miners had organized local unions and asked to be taken under the wing of the national body. The operators contend that agitators had been working secretly in the region before a single local was organized. Strike leaders cite as the issue the right of American workmen to organize under whatever affiliation they choose. The strikers give this, and this only, as the reason for remaining on strike—the right to organize as they think best for their own industrial welfare.

The operators admit the right of the men to organize. They themselves have their associations and are perfectly willing that the miners should have theirs. If they wish to organize a field union, or even a state union, the operators will not object. But there is one reservation upon which they insist—they will have no dealings whatever with the United Mine Workers of America.

This is an organization, they say, that habitually treats contracts as mere scraps of paper. They cite instance after instance to prove their assertion. They hold it to be an agency of agitation and one that undoubtedly will involve their field in far-away labor troubles. They cannot trust the United Mine Workers of America, and stand upon the proposition that they will not do business with a man or a set of men in whom they have no confidence.

The miners have the right to join the United Mine Workers of America. The operators have the right to refuse to employ a member of that organization. Each stands upon his self-evident prerogative. It appears then that a miner who thinks more of his membership in the United Mine Workers than he does of his job



POWERHOUSE AT BORDERLAND PLANT 1 AT BORDERLAND, W. VA.
The bridge which spans the Tug River at this point connects the company's properties in West Virginia and Kentucky. This is one of the mines chiefly affected by the strike, and previous to being placed under guard of U. S. troops was the object of attacks from the surrounding hills. The store and house in the foreground have both been fired upon, as well as the powerhouse. The postoffice is in the store and armed soldiers are constantly on guard there and at other points in the camp. The company operates another mine six miles down the river. The house just across the railroad is that of L. E. Armontrout, the manager of the mines, who from the porch returned the shots of strikers ambushed in the hills facing the store.

in that particular field should seek work where his policy and the policy of the operators are not so hopelessly at variance.

With a record of twenty years of peace during which wages were kept at a high point and working and living conditions were steadily improved, the operators undoubtedly hold the preponderance of public sympathy. The trouble did not come because the workman was oppressed. The square deal was the rule, and both factions recognized it as the square deal. The operators committed no offense against their employees, and yet they were afflicted with a disastrous strike.

A survey of the field shows that the miners lived under unusually good conditions. At one mining town—Borderland, six miles down the river from Williamson—the miners were provided with homes that would be envied by the average workman in other industries. The company paid an average of $300 a month in wages. The frame houses at the village, warm and comfortable and in good shape, rent at $2 per room per month. At this town twoscore brick houses, of cottage and bungalow architecture, have been erected. These are set in spacious lawns and are equipped with electric lights, shower baths and hot and cold water. They contain five and six rooms each and rent for $20 and $24 per month respectively. More of these brick houses are under construction. Yet several hundred miners went on strike at this "camp."

When the operators realized the fact that the United Mine Workers had set out to organize the field some of them adopted methods that could not fail to bring criticism. A miner who joined that union was summarily discharged. He and his family were evicted from the company houses on a half hour's notice, with no time to arrange for completing payment on furniture bought on the installment plan. In some cases these families were evicted by Baldwin-Felts detectives. Such harsh methods undoubtedly served to crystallize a sentiment for organization that previously was not particularly strong. They antagonized miners who had not joined the union but who nevertheless entertained a class sympathy which drove them to protest. These methods are chiefly responsible for 1,500 miners being on strike today out of a normal working force of 5,000. After an investigation of both sides I was forced to the conclusion that the policy of summary eviction is the only reason on which to base any serious criticism of the operators.

Destitution in the Tents of the Strikers

Perhaps nothing in the district is more striking than the contrast between the homes just mentioned and the tent colony of the strikers at Lick Creek. Living conditions in that camp are of the most primitive type. The sixty-two tents are fitted with furniture of crude home construction. Food in many cases is cooked upon stoves built of rocks and mud.

The children at this camp are poorly clad and the men and women are shabby. All are scantily fed on the coarsest of fare. The younger children cry almost incessantly, while the women, hungry themselves, do their best to quiet them by devices that call for no expenditure of money for food. The men while away the time in listless games of cards, with pebbles for stakes, and in scrutinizing the surrounding hills for spies and assailants, who they say are always on the watch.

The strike allowance given these people by the United Mine Workers of America amounts to $5 a week for the head of the family, $2 for the wife and $1 for each child.

High up on the bluffs across the river are the W. S. Leckie collieries, working below normal capacity because of labor shortage. Around the mines warm, comfortable dwellings stand empty. In the company stores are attractive stocks of foodstuffs and clothing at moderate prices. In the clubhouse of the Leckie camp are a dance hall, a motion-picture theater, a billiard room and a bowling alley.

Awaiting each child who was taken out of the camp into the tent colony is a seat in a modern school. The camp is provided with a physician and a woman welfare worker—Miss Edith Bennett—who saw service in the Red Cross in France. Miss Bennett pays particular attention to the children and to the instruction of mothers. Her services are given free to the inhabitants of the village. Each family pays 25c. a month for the services of the doctor.

The houses rent for an average of $16 a month. Awaiting the strikers are jobs which, according to the company's records and the admissions of the men, would pay each miner an average of $300 a month. And yet the miners refuse to cross the river from the tents, in which they are suffering hunger and all the discomforts of such a life, to return to work.

A constant procession of organizers or agitators goes from camp to camp and from tent to tent, setting forth at great length and with much ardor the advantages to come if the strikers hold out. And the strikers, at this writing, apparently intend to hold out. There are no signs of wavering, even though they see their jobs gradually being taken by newcomers. The operators intend to hold out also, as far as recognition of the United Mine Workers is concerned. Meanwhile, with a perfect deadlock existing, coupled with the presence of U. S. troops, the community feels that but little is needed to touch off the fire of a genuine revolt.

Industries Slump in Anthracite Region

IN SHARP contrast with conditions in the mines themselves, where there is steady work offered at wages which have been recently increased substantially, industries other than mining in the anthracite region are showing marked signs of a slump, coupled with broken working time and a possibility of sharp recessions in both price and wages. The "equalization" demands as formulated by the anthracite miners, by asking additional wage increases, are thus an effort to force up wages—and consequently prices—in what is a falling market, taking industry as a whole.

The Eagle Silk Mills at Shamokin, which form the main manufacturing plant of one of the largest silk concerns in the country, closed at noon Oct. 30 for an indefinite period. Three thousands workers, with a weekly payroll said to be about $50,000, are idle. Mills at Trevorton and Kulpmont, as well as plants outside the anthracite region, are affected. Officials of the Eagle corporation say that the public will not pay the prices asked for goods.

On Monday, Nov. 1, the Taubel Knitting Mills, of Shamokin, part of a chain owned by the largest manufacturer of hosiery in the world, suspended for lack of orders, throwing 500 hands idle and making the prospect dubious for 300 additional hands left at work in departments other than the main mill. Neither the Eagle nor Taubel executives had any idea when they could resume.

These conditions are, of course, not peculiar to the anthracite region. In general the buying public is objecting to prices and is not purchasing save under necessity. The Guaranty Trust Company, of New York, says that there is an endurance contest between the retailer and the consumer, with conditions favoring the consumer.

West Virginia Mine Electricians and Mechanics Discuss Their Everyday Problems

Rapid Growth of Electrical Mining Machinery—What to Outline in Ordering a Pump—Common Error in Arc Welding—New Type of Industrial Lamp—Proper Care for Transformers

AN ATTRACTIVE and highly instructive program was prepared for the second annual meeting of the Electricians and Mechanics Institute, which was held at Charleston, W. Va., on Oct. 28, 29 and 30, under the auspices of the Charleston Electrical Supply Co. and in connection with a display of mine electrical equipment by many of the leading electrical manufacturers of the country. Few institutes and engineering societies have been conceived and created for the sole purpose of diffusing knowledge among such practical mining men as have never had an opportunity to acquire a technical education. The Electricians and Mechanics Institute is one of these. Mine executives of other states might do well to follow the footsteps of West Virginia in the organization of similar institutions. The greater problems bearing on more economical and efficient production lie in safe hands today; but not so the thousand and one little puzzles that the mine electrician and mechanic must face daily. To aid him in the efficient performance of his tasks he is usually forced to draw on the fund of his experience, which may be backed with only the meagerest of book learning. Mine electricians are anxiously seeking information as was well evidenced by the attendance and the close attention of all who were present.

Second annual convention of mine electricians and mechanics is held in armory at Charleston on Oct. 28, 29 and 30, in connection with electrical equipment display by leading manufacturers of the country.

Once a year West Virginia's mine electricians and mechanics turn aside from the repairing of burned-out armatures, locating defective rail bonds, connecting pipe lengths and what not to meet in council and discuss their problems. The discussions that arise at these meetings are perhaps more informal than are heard at most institute sessions, and the papers that are presented are not embellished with resounding technical terms, for no austere technical atmosphere surrounds the members. The delegates from the different coal companies of the state pay strict attention to the daily proceedings, for theirs is an opportunity that will serve in the future as a stepping stone to better and more lucrative positions.

Half Day Devoted to Mining Exposition

Edward D. Knight, electrical engineer with the Cabin Creek Consolidated Coal Co., of Kayford, acted in the capacity of chairman at the meetings this year. The opening session, on Thursday morning, Oct. 28, was devoted exclusively to the general inspection and demonstration of all the electrical machinery and equipment that had been assembled for display in the booths that circled the main floor of the armory.

After lunch the delegates seated themselves in front of the armory stage in the central portion of the building. E. W. Seeger, of the Cutler-Hammer Co., read the first paper of the meetings, which was entitled "Everyday Electrical Control Apparatus for Everyday Mining Conditions." Following Mr. Seeger, E. D. Knight gave a talk on the ideal co-operation between mine foremen and mine electricians. Neither Mr. Seeger's paper nor Mr. Knight's talk aroused a great deal of discussion. The final paper of the morning, "Electricity and Its Applications in Coal Mining," was then read by D. E. Sullivan, of the State Department of Mines. Mr. Sullivan's article showed that much care had been expended in its preparation. It dealt in the main with the history and progress of mine electrification.

Sixty-four Per Cent of Coal Machine-Mined

The progress in the adoption of mining machines that has been made in West Virginia is interesting. "In 1896 and 1897," Mr. Sullivan stated, "the first electric mining machines were introduced in the mines of the state. In 1897 sixteen of the mines of West Virginia were using in the aggregate fifty-five machines. This brought about a new era in coal mining; the new machines undercutting about as much coal as ten men. Especially was this true in the harder seams. In 1897 only 5 per cent of the coal mined was cut by machine, and as the new method was an experiment, its progress was slow for several years.

"It was not until 1902-1903 that the electric machine came into popular favor in the mines of the state. The demand from that time has steadily increased until in 1918 there were 3,188 machines in 883 coal-mining operations. Over 64 per cent of all of the coal produced in the state that year was cut by machine. In the period 1896 to 1918 the production of coal by electric mining machines increased from 600,418 tons to 51,816,144 tons."

In the evening a moving picture was presented entitled "Welfare and Health." The picture was shown by C. R. Lingo, of the Ilg Ventilating Co., of Cincinnati.

The busiest session of the entire three from the standpoint of number of papers presented came the following day. In the morning meeting E. V. King, of the West Virginia Inspection Bureau, read a paper on an extremely timely subject, entitled, "Common Fire Hazards in Electrical Installations with Suggestions for Their Elimination." "Sub-station Installations for Coal Mines" was the subject of the next paper, which was read by the author, A. M. Rosenblatt, of the Engineering Service Co., of Charleston. Following Mr. Rosenblatt, J. J. Moore, of the Thomas Elevator Co., of Chicago, gave a talk on electric hoists in coal-mining service. Mr. Moore's talk, possessing high practical

worth, was perhaps more keenly enjoyed than any other given during the entire course of the meetings.

How to Specify What Kind of Pump Is Needed

In the afternoon John W. Hallock, professor and head of the department of industrial engineering at the University of Pittsburgh, discussed "The Type of Pump to Specify." Professor Hallock proved well qualified to speak on his subject, which, incidentally, is one that should concern more deeply the technically trained executive at the mine. Yet, the choice usually is left to the mechanic.

"There are two main variables that must be considered in the selection of a pump," said Professor Hallock. "The capacity of the pump is one of these variables and usually is specified in so many gallons per minute. Thus for gathering purposes we have pumps of capacities of 30, 50, 75, 100 and even 200 gallons per minute. How fast the pump shall run to produce this capacity usually is left to the discretion of the manufacturer. He designs his pump so that piston and gear speeds, bearing pressures and water velocities may be within the limits that past practice has shown to be most suitable.

Indeterminate Pump Specifications

"Never ask for a price on a 3-in. pump, as the expression is meaningless. It might mean a piston pump having a 3-in. discharge or one having a piston of 3-in. diameter, or it might mean a centrifugal pump having 3-in. connections. Obviously, the expression gives no idea as to the required capacity.

"The second of the great variables is the total head against which the pump is to operate. Too great care cannot be exercised in specifying this figure. First, the total head consists of three kinds of heads or back pressures on the pump: The static head, the friction head and the velocity head.

"The static head is the difference in elevation between the water in the suction pit and the highest point of discharge. It has no relation whatsoever to the length of the discharge line or size of line. This, of course, includes suction head as well as discharge head. And right here let it be said that, all things being equal, the suction head should be kept as low as possible. Keep it down to 8 or 10 feet if possible, and use a foot valve in every case unless it is absolutely impossible to do so.

Friction Head Increased If Pipe Is Rusty

"The second item in the total is the friction head. This head is exactly what its name signifies. It is the additional head imposed on the pump by reason of the friction of the water against the walls of the pipe. Contrary to popular belief, the friction is greater in a small pipe than in a large one discharging the same amount of water. Likewise in the same size of pipe, the larger the quantity of water, the greater the friction. Friction head usually is expressed as so many feet per hundred feet of discharge pipe. This friction value is determined by actual experiment, from which long and accurate tables have been compiled which are embodied in most trade catalogues.

"These tables are always based on the use of new clean pipe. If the pipe is old and, therefore, somewhat corroded inside, the friction will, of course, be greater. Provision usually is made for the added friction head due to the use of old pipe by increasing the figures in the tables several per cent. For instance, in pipe that has a rough interior the friction valves may be 50 per cent greater than shown. Elbows and fittings also increase the friction head.

"The velocity head is the last item to be considered in determining the work which the pump must perform. It is the head or back pressure imposed on the pump in starting a column of water from a state of rest and accelerating it to full velocity. It is similar to the big inrush of power on a motor that is just starting up. This head usually is not accurately calculated for each specific case, but due allowance is made in design and specification to take care of this portion of the total head."

Short Arc Will Alone Fuse the Metal

Following Professor Hallock, W. P. Bovard, of the Ohio Brass Co., read a paper on "Arc-Weld Rail Bonding" that was descriptive of several jobs encountered around the mines. "In general bonding practice," said Mr. Bovard, "the most difficult thing for the novice to learn is to maintain a short, steady arc. An arc over ⅛ in. in length will not bring to the fusion point the surface upon which the deposit is flowing, and in consequence cold laps and seams result. The surrounding area is covered with slag and globules of metal and the deposited metal usually is burned or badly oxidized, due to the increased heat and long path of the arc. With the electrode held in the proper position a good crater is formed and the metal is deposited satisfactorily. With the long arc no penetration is possible, and the deposited metal falls down outside the heated area. With the long arc excessive overlapping and absolute lack of fusion are the usual result."

Importance of Accurate Electricity Meters

"Overhead Line Material" was the subject of a paper by C. C. Beck, also of the Ohio Brass Co., which was read at the conclusion of Mr. Bovard's paper. In the absence of the author, Edwin Wortham, consulting engineer of Richmond, Va., Professor Hallock read a paper entitled "Need for Switchboard and Test Instruments," saying: "A measuring instrument means a meter, no matter of what kind, which can be sworn to on the witness stand as being accurate within at least one per cent. A voltmeter, registering from 0 to 100 volts, should record the voltage with an error not to exceed one volt. If the instrument is not as delicate as this, it should be discarded and a new one sought in its place.

"In the United States today generators producing 12,700,000 kw. have been installed. It is highly conservative to say that these 12,700,000 kw. pull a full seven hours out of the twenty-four hours of each day for at least twenty-four days in the month throughout the year. Roughly this figures about 26 millions of kilowatt-hours. If one meter out of every three in the country is inaccurate by 2 per cent, 174 million kilowatt-hours are either lost and uncharged on the one hand or overcharged on the other. This stray current, as it might be called, costs about 2c. on the average per kilowatt-hour and represents $3,480,000 annually which may not be punching the time clock at all, or may be punching it unintentionally." Mr. Wortham illustrated his point rather severely, as the law of averages will tend to produce a balance, and it is apparent that no such loss of power is taking place.

On Thursday evening R. R. Dunlap, of the Jeffrey Manufacturing Co., discussed the relation between horsepower of mining-machine motors and voltage at the

face. Following his talk a moving picture—"Cutting and Loading"—which had been filmed by the Jeffrey people was presented and proved of more than ordinary interest.

The final session, on Saturday morning, brought forth but one paper, that being entitled "Notes on Electric Lighting of Coal Mines and Equipment." It was read by the author, Perry E. Hurd, of the Westinghouse Lamp Co. According to Mr. Hurd, a new lamp is about to be placed on the market which will prove to be more adaptable to underground service than any now in use, including the "mill" type, the filament of which is reinforced against sudden jars and shocks. The new lamp is of different construction from others, the filament being wound around a central spool instead of suspended from the glass shaft as is now the regular practice. Further, the shaft is suspended by springs from the base so that any sudden shock to the globe will be partly absorbed by the shaft instead of being directly transmitted to the filament.

An informal talk by L. H. Alline, of the Packard Electric Co., closed the final session and was well received by the institute members. Mr. Alline stressed the importance of not abusing transformers. In his opinion no single piece of equipment at the mines gives greater service or receives greater abuse, yet it demands a minimum amount of superintendence. The simplest kind of attention would often suffice to keep these electrical units in good repair the year around.

It is good practice to remove the sludge deposited in the base at least once yearly, when perhaps the oil should be renewed. If it is not advisable to replace all the oil so often as once a year, at least the lowest stratum should be replaced. Perhaps the better practice is to take a sample of the oil at regular intervals and submit it to the manufacturer, who is equipped to test it and report whether it should be renewed.

Too Much Use Made of Overload Rating

One member inquired why no overload rating was now being placed on transformers. Mr. Alline replied that the practice at the mines had formerly been to take the utmost advantage of the overload capacity, a practice which made the transformer short-lived. Now, the proper transformer was specified in the beginning and the overload capacity utilized only in emergency, this despite the fact that perhaps every machine was built to withstand an overload of 25 per cent. Mr. Alline then showed by diagrams the manner in which the two remaining transformers should be connected in open delta whenever one transformer out of the original bank has to be shipped to the factory for repairs.

At the conclusion of the program a rising vote of thanks was extended to the Charleston Electrical Supply Co. for the excellent manner in which the officials of that company had arranged the program and for the time that they had expended on the arrangements. The institute does not have a paid-up membership and is called together yearly by the Charleston company.

THE FEDERAL TRADE COMMISSION has already collected considerable information on the amount of investment necessary for operation of coal mines, but not until adequate investment figures are assembled for each district will it be possible to show the average net profit by districts in terms of the rate of return on the investment, which is the only accurate measure of profit. No satisfactory judgment of the rate of return on investment can be formed from any examination of the margins per ton.

United States Helping to Rebuild Railways Of the World

THE railroads of the world are now turning to the United States for material with which to renew and enlarge their working plants. Our exports of railway material in the fiscal year 1920 aggregated over $150,000,000 in value as against $80,000,000 in 1918 and $25,000,000 in the year before the war.

Necessarily, says a statement by The National City Bank of New York, the world's railways "marked time" to a very considerable degree during the war, especially in new construction. In Europe the construction of new roads was, of course, limited by war demands and in many cases the destruction far exceeded the construction. In other parts of the world which had relied chiefly upon Europe for financing new construction and supplying materials therefor the industry of railroad building came also to practically a standstill, and the world's railway mileage emerged from the war period showing but a small gain over that at its beginning.

Exports of Railway Materials Jump

It is not surprising then, to find that our exports of materials for railways in 1920 are six times as much in value as in the year preceding the war. Indeed the grand total of material exported for railways might exceed $200,000,000 if complete figures could be obtained. In certain lines such as steel rails, other track materials, locomotives, and cars, both freight and passenger, exact figures are available, but it is not practicable to determine what proportion of the $25,000,000 worth of structural steel or the $50,000,000 worth of metal working machinery exported in 1920 was for the railways. In locomotives alone the total exports in the fiscal year 1920 amounted to $43,000,000 against $25,000,000 in 1919 and less than $4,000,000 in the fiscal year 1914, all of which preceded the war. Of steel rails the total for 1920 was $32,000,000 against $10,000,000 in 1914, and of other track materials, including frogs, switches, spikes and ties, exported in 1920 $21,000,000 against approximately $5,000,000 in 1914. Railway cars for freight purposes show very large totals in the exports of 1920, $54,000,000 against $13,000,000 in 1918 and $5,000,000 in 1914.

This demand for new material for construction or equipment of world railways is especially interesting as evidence of the world's growing confidence in the quality of American manufactures. The calls for this high grade product come from every direction. Of the $53,000,000 worth of freight cars for steam railways exported in 1920 $31,000,000 worth went to France, $11,000,000 to Italy, and $5,000,000 to Cuba. Of the $32,000,000 worth of steel rails exported in 1920, the distribution was much wider; $12,000,000 worth to Japan, $5,000,000 to Cuba, $1,000,000 to China, including the leased territory of Kwang-tung; $1,500,000 worth to Brazil, $1,300,000 to France, $2,000,000 to British South Africa, $1,300,000 worth to the Philippines, $1,500,000 worth to the Dutch East Indies, and $750,000 to Peru. Of the $43,000,000 worth of locomotives exported in 1920 over $6,000,000 worth went to Italy, $2,000,000 worth to France, $4,000,000 to Cuba, $2,500,000 to Brazil, $4,000,000 to China, including Kwang-tung; nearly a million dollars worth to Russia and Europe, and one-half million dollars worth to Russia in Asia, while our nearby neighbors, Canada and Mexico, took about one-half million dollars worth each.

How Managers Could Decrease Frequency of Gas Explosions in Anthracite Mines*

One Casualty a Day in Anthracite Mines from Gas Explosions—Gives Instances of Methods Being Adopted That Made Dangerous Mines Unusually Safe—Ventilation Makes a Gassy Place Temporarily Secure, but Such Places Are Still Potentially Highly Dangerous and Must Be So Treated

By Joseph J. Walsh†
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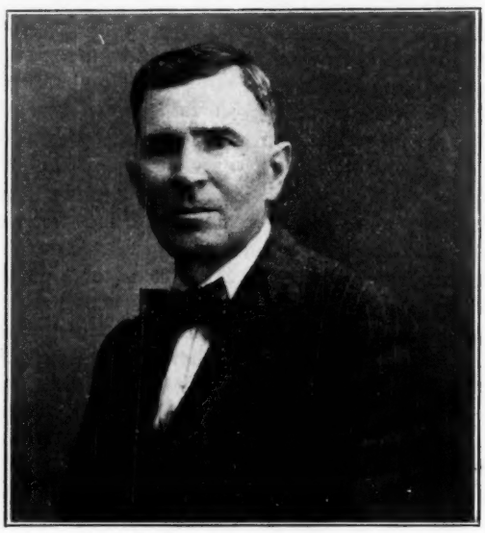
NO casualties in coal mines are less excusable than those caused by gas explosions. With the many means available for the adequate ventilation of mines, with the many safety devices introduced to detect explosive gases and to prevent their ignition, there is but one explanation that can be made for the frequency with which such accidents occur in certain parts of the anthracite region. In that region during the last forty-seven years gas explosions have caused, on an average, a casulty a day. The safety of human life should be guarded by means that are calculated with so high a safety factor as to make accidents seem impossible. Especially high should that factor be when unfavorable conditions exist that cannot always be foreseen. The factor of safety of the hoisting rope can be expressed in numbers but the safeguard thrown around the possibility of a gas explosion cannot be made the subject of mathematical calculation, and for this reason more caution is needed.



J. J. WALSH

The author of this article has made a study of ventilation and in his work as mine inspector in the district around Nanticoke has seen good and bad examples of ventilation. He proves the value of the good from the sad experiences resulting from the bad. He has published a useful book on "Mining and Mine Ventilation."

General assertions that the miner's safety is in his own hands and that if he will not exercise caution nothing can be done for him are neither true nor do they help to meet the situation. It is true the miner does have statutory duties to perform. True also is it that he sometimes fails to perform those duties, but nevertheless many explosions occur from conditions that are beyond his control.

We are told that the miner who knows only a foreign tongue is unskilled and untrained in mining affairs, and that as a result he endangers his own life and that of others. It is said that he must be educated before any degree of safety can be assured. This statement is somewhat in conflict with actual fact, but education is, nevertheless, an essential element in any plan for the prevention of accidents. However, the educational campaign should be extended so as to include the inspector, the mine manager and all other mine officials. A man may be highly efficient in all the technical branches of mining and at the same time be unable to recognize danger when he meets it.

Great things have been achieved as a result of the educational movement among miners. Many have left the ranks and are now filling official positions. Regardless of this there will always be found in every coal mine the farmer from European countries who is unfamiliar with our customs and who, because he is unskilled and uneducated in safety, will imperil not only his own life but the lives of others, and surely we must not allow the safety of the mine to be imperilled by any man.

A chain is no stronger than its weakest link, and likewise a mine can be no safer than the most careless or the most unskilled man in it, unless drastic precautions are taken to make the mine so safe that the lack of care and skill of a workman cannot jeopardize it. Regardless of educational efforts, unskilled workmen will be found in every mine, and success in reducing the number of accidents from gas explosions will be no greater in the future than in the past unless the mine manager and the representatives of the state see that the mines are made inherently safe. In a certain part of Pennsylvania is a group of mines from which 457 tons of methane, or about 4,323 tons of firedamp, is expelled each day. During four years these mines produced more than 1,600,000 tons of coal for each gas-explosion casualty. A second group of mines which lies adjacent to those just mentioned has similar conditions. From this group 390 tons of methane, or about 3,689 tons of firedamp, is expelled daily, and the production per accident from explosion of gas is barely over 300,000 tons. Still a third group, comparable in every respect and generating about the same volume of gas, produces slightly less than 500,000 tons of coal per gas-explosion accident.

The industrial efficiency which made it possible in the first group to obtain so large a tonnage for each accident can be attributed to the fact that proper safeguards were placed around the workmen. For instance, safety lamps are used to the exclusion of all others in a section of the mine through which 22,000 cu.ft. of air is passing

*Abstract of paper entitled "Rules for Prevention of Gas Explosions in Anthracite Mines," presented before the Mining Section of the National Safety Council, Milwaukee, Wis., Sept. 30, 1920.

†District state mine inspector.

each minute and in which the methane content is 0.26 per cent. Also in another section in which the methane percentage is 0.25 per cent and the volume of air is 16,000 cu.ft. open lights are forbidden. In another mine similar favorable conditions obtain. Here, though a volume of 25,000 cu.ft. of air passes each minute and the methane percentage is only 0.14, the sole means of illumination is the safety lamp.

On the other hand, in the second group of mines open lights were used in an atmosphere containing as much as 1.12 per cent methane, the volume of air flowing being 28,000 cu.ft. per min. In the third group trolley locomotives were hauling trips in roadways where the gas percentage was in one case 1.02 per cent, and in another 2.30 per cent, the air volume being 12,000 and 34,000 cu.ft. respectively. Many similar instances of neglect might be cited.

Four Causes for the Accumulation of Gas

The chief causes for accumulations of gas in a coal mine are: (1) Insufficient volume of air provided by a ventilation fan which may be either too small or improperly located. (2) Loss of air through leakage, only part of it reaching the working faces. Conditions of this kind may be found in mines where the stoppings between the intake and return airways are poorly constructed. Where a mine is developed on the single-entry system adequate ventilation is hard to obtain. (3) Short circuiting of the ventilating current, due to a neglected door, the breaking of a brattice or the driving of openings too far in advance of the air. (4) Frequent interruptions of the air current on account of electrically-driven fans failing to function. This cause for accumulations of gas in coal mines is becoming quite serious.

Ignition of gas takes place in a coal mine most frequently as a result of the employment of open lights, the use of a long-flame powder or the utilization of electricity. Smoking, defective safety lamps and the careless striking of matches also are contributing causes of gas ignition.

Follow These Rules to Avoid Explosions

It is not my purpose to enumerate the many rules that have been published from time to time as precautions to be observed by the 130,000 miners of the anthracite field of Pennsylvania, but rather to suggest to the 128 mine managers a means by which they can eliminate to a large extent the possibility of an explosion, in case the commonly applied rules are overlooked by some member of the larger group.

(1) When about to install a fan, its size and location should be determined with the aid of a ventilating expert. Remember that as time goes on airways will become congested as a result of roof falls. The falls will not be cleaned up, as it is sometimes not practicable to do so. Because of this the ventilation will be impaired. To provide against this contingency the power of the ventilating equipment should be at least three times as great as that calculated from the volume of air required and the ventilating pressure assumed.

(2) Build all stoppings between intake and return airways of stone, brick or concrete; this can be done regardless of the pitch of the bed.

(3) As far as possible avoid the use of doors on the main roadways.

(4) At the more gaseous mines use steam-driven fans for ventilating purposes; they are more reliable than those which are electrically driven. It was found by an examination of the records of eight steam-driven fans that they stopped without warning on an average once in sixteen years. Under like conditions it was found from a similar examination of eight electrically driven fans that without warning they failed to function once every four months. Accidents have occurred as a result of the stopping of fans.

(5) At moderately gaseous mines, if an electrically-driven far be operated its motor should be on an independent circuit. By the term "moderately gaseous" is meant a mine or section of a mine in which is found a gas condition such as described in Table I.

(6) The air in each section of the mine should be analyzed monthly, but it must be remembered that danger lies not so much in the percentage of gas in the current as in the volume of gas generated each minute.

(7) With few exceptions, safety lamps should be used in mines having conditions such as are shown in Table I, because open lights are known to have ignited accumulations of gas in these mines, causing either fatal or non-fatal accidents.

TABLE I. CONDITIONS AT MINES WHERE GAS EXPLOSIONS OCCURRED FROM OPEN LIGHTS

No.	Quantity of Air per Minute	Per Cent of Methane	Cubic Feet of Methane Generated per Minute
1	10,000	0.29	29
2	15,000	0.44	66
3	8,000	0.52	41.6
4	12,500	0.18	22.5
5	8,000	0.32	25.6
6	20,000	0.24	48
7	11,000	0.26	28.6
8	16,000	0.15	24
9	8,000	0.23	18.4

(8) A mine in which the direction of the air current is controlled by doors is, under like gas conditions, more dangerous than one ventilated without them. This should be considered in the application of safeguards.

(9) Permissible explosives should be used in all mines where danger of gas explosions exists.

(10) Any section of a mine in which 125 cu.ft. or more of methane is generated each minute should be classed among the more dangerous mines. By the term "section" is meant that part of a mine defined by the anthracite mine laws as being ventilated by a single current of air. The law allows seventy-five persons to work in such a section, which would, if just large enough to provide working places for that number of men, comprise an area of ten to twelve acres.

(11) In gaseous mines electricity should be used only in the intake airways.

(12) To give a miner a safety lamp for testing purposes and at the same time permit him to work with an open light is a dangerous practice. At any time while he is about his duties a door may be left open, and gas may accumulate. It would be unreasonable to expect the most careful workman to avoid accident in cases of this kind.

Unfortunately, it cannot be said that explosions are things of the past; they continue to occur in spite of all the skill and care exercised by mine officials and miners. It usually is the unexpected that happens; therefore it will be found to be prudent to surround workmen with every known safety device and place in their hands such means as will still insure their protection if a dangerous condition should arise.

Discussion by Readers

Edited by
James T. Beard

Peculiar Advantages in Adopting the Longwall System

Reference is here made to the peculiar advantages of the longwall system of mining, in contrast to the room-and-pillar system; and exception is taken to the statement that a soft floor is a disadvantage to the success of longwall work.

DISCUSSING the question of the best method to apply in working out the coal from a thin seam having a thickness varying from 32 to 35 in., V. Frodsham recommends the use of a combined pillar-and-stall and panel system of mining. In his letter, *Coal Age*, Oct. 14, p. 809, Mr. Frodsham makes the statement that "a soft floor is a great disadvantage to the success of the work." It is this statement particularly that has attracted my attenion and seems to call for a few comments.

I will not attempt to answer the inquiry of L. E. R., to which reference is made in this letter, further than to say that the thinness of the seam in question makes it quite apparent that the roof must be ripped or brushed or the bottom lifted, in order to secure the necessary headroom on the roads. There will naturally be some difference of opinion as to whether the roof or floor should be cut, but this must be determined by a more familiar knowledge of the conditions.

It can only be a lack of experience in longwall mining that would lead one to suggest the working of this seam by any room-and-pillar system. In my opinion, it would not be possible to obtain more than 25 or 30 per cent of the coal in the first working, should that system be adopted, and that would mean the opening up of a large territory before any reasonable output of coal could be secured. Moreover, the cost of brushing roof or lifting bottom, laying tracks and timbering haulage roads would be excessive.

Draining a Soft Bottom Avoids Trouble

Referring to the statement mentioned regarding the alleged disadvantage of a soft bottom in longwall work, I venture to say that if the work is properly conducted a soft bottom will give far less trouble in longwall than in room-and-pillar work. No one will deny that in the use of the latter system, the pillars would be forced into a soft bottom causing the roadway to heave and greatly increasing the cost of maintaining the roads.

In contrast with these troublesome conditions, consider that under ordinary conditions such a seam as this can be worked with continuous conveyor faces, say one hundred yards in length. In my experience when dealing with conditions such as these, the lifting of bottom to attain the required headroom on the roads had the effect of draining the underlying strata, which entirely did away with the trouble.

One can fully understand how there would be much difficulty encountered by adopting a room-and-pillar system under these conditions. It is not hard to believe that the heaving of the soft bottom would practically block the haulage roads and airways in the system he describes. But the difficulty is practically eliminated by adopting the longwall method and lifting the bottom so as to drain the underlying stratum.

Where it is possible to establish a continuous longwall face there are many advantages peculiar to that system. The more important of these are the following: Total extraction of the coal in the first working; concentration of the working force; minimum length of haul from the working face to the shaft bottom; cost for maintaining tracks and timbering roads reduced to a minimum; little or no explosives required; a larger percentage of lump coal obtained; better ventilating conditions where the air travels directly along the working face and requires little or no bratticing. The miners also are generally more efficient by reason of working in good air.

Where good substantial roadpacks are built on each side of the track, practically all the timber that will be required is what is necessary to keep two or three rows of posts at the face and build a few cribs at the corners of the roadways.

MINING ENGINEER.
McKeesport, Pa.

Attention to Details in Longwall Work Insures Success

The careful consideration of many important details in the prosecution of longwall work is shown to be essential to success. An instance is given where the undertaking failed through an insufficiency of packwalls, as the result of sending refuse to the surface instead of using it for building the packs.

I HAVE been greatly interested in the discussion regarding the best method to employ in the working of thin coal, the particular seam in question being 35 in. in thickness, as given in the inquiry of L. E. R., *Coal Age*, Aug. 19, p. 403.

Although the inquirer has failed to give sufficient data regarding the nature of the coal and the surrounding strata, thickness of cover and inclination of the seam, it can be stated without hesitation that the adoption of the room-and-pillar system of working advocated by one writer is undoubtedly out of the question. Deciding on the general plan of working a coal seam, is a matter of considerable importance in the later operation of the mine.

The room-and-pillar system applied to this thin seam would not only reduce the output per man, but the cost per ton of coal produced would be excessive in the first working. Moreover, a large loss of coal would result from the incomplete extraction in the second working or when drawing back the pillars. This is a common occurrence in room-and-pillar working, but is practically eliminated in the longwall method of mining.

Assuming a depth of cover not less than 150 ft. and a fairly level seam, it cannot be denied that the use of the longwall system, in this case, will give more round coal, better ventilation, and afford a closer supervision of the workmen, thereby increasing the output of coal per man, and reducing the cost per ton to a minimum. In most cases, the use of explosives is entirely eliminated in longwall work.

With this preface, I want to submit the plan shown in Fig. 1, which represents a section of a longwall mine. It will be observed that slant roads are driven off from

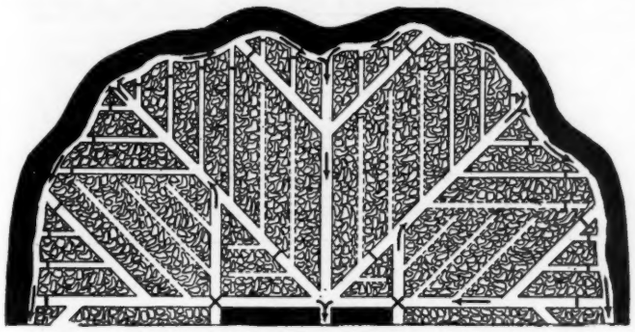


FIG. 1. GENERAL PLAN OF LONGWALL ADVANCING

the main headings, at an angle of about 45 degrees, and rooms are turned off these slants on 40 ft. centers. The rooms are driven up about 60 yd. when they are cut off by another slant, which is turned from the main heading. New rooms are then opened on this slant and driven parallel to the main heading as before.

In order to give a height of about 4½ ft. on the roads in these rooms, it will be necessary to take down about 18 or 20 in. of roof, or lift the same amount of bottom. The refuse thus obtained is used to build packwalls on each side of the road, in each room and on each slant road. Assuming the width of a gateroad as 9 ft. and estimating on a 20-in. cut, the amount of material secured per foot of roadway is $9 \times 1 \times 1\frac{2}{3} = 15$ cu.ft. in the solid, or say 30 cu.ft. broken. The seam being

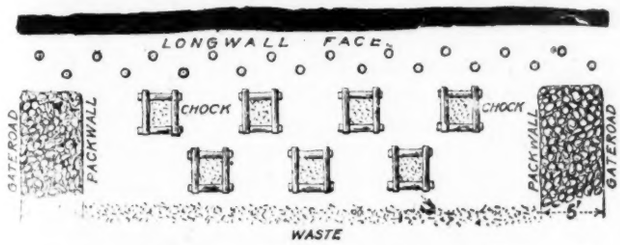


FIG. 2. TIMBERS AND COGS ON A LONGWALL FACE

practically three feet in thickness, there will be sufficient material for the building of two packwalls, five feet wide, one on each side of the road.

It is clear that the life of the main headings and the slant roads will be longer than that of the rooms. Also, the greater headroom needed on the roads will provide material for a greater width of roadpacks. In order to reduce the subsidence of the roof strata to a minimum, all packwalls must be substantially built and reinforced at regular intervals with wooden "cogs" or "chocks."

Referring now to Fig. 2, which shows the plan of a longwall face between two gateroads or rooms, it is seen that if the rooms are 9 ft. wide and driven on 40-ft. centers the building of two packwalls, each 5 ft. in width, will leave 21 ft. of waste between the packs. In this space, as shown in the figure, I would build temporary cogs in two rows. As each new row is built, the back row of cogs must be drawn and the roof allowed to cave in on the waste. If the roadpacks are well built they will prevent any undue sinking of the roof, under any cover up to 1,000 ft. in thickness.

The success of longwall work will always depend on the thoroughness with which the work is performed, and the execution of each detail relating to the building of the packwalls and chocks or cribs. Only skilled miners can be employed. Unskilled labor or miners who are not accustomed to longwall work, not knowing the necessity of doing a good job, are prone to do the work in a careless manner, which is sure to bring trouble sooner or later.

Experience and Familiarity with Longwall Work Needed to Insure Success

The adoption of the longwall system of mining requires that the officials in charge shall be experienced men and thoroughly familiar with longwall work. In late years, this system has grown in favor, in many mining districts, and has taken the place of the room-and-pillar system formerly used. There are instances, however, where the undertaking has not been crowned with success, which is largely due to the lack of acquaintance of the men in charge with the principles involved in this system. Allow me to cite an instance that occurred a few years ago in my own experience.

The conditions in the seam that we were working at that time were ideal for the use of the longwall system. The mine had been opened originally on the room-and-pillar system, but was now being worked by longwall. The seam contained sufficient refuse to completely stow the gobs. Though employed as fireboss at the time, but being familiar with longwall work, I endeavored to impress on the minds of the miners, the necessity of stowing all the refuse and building substantial packwalls, which had been drilled into me from boyhood. Frequently, I was obliged to stop the supply of cars to certain miners, until they had completed the work of building the necessary packs.

This soon brought me into bad favor with the foreman and the manager, who claimed that the miners spent too much time on the packwalls. They argued that it was cheaper to load the dirt into a car and send it to the surface where it could be dumped instead of handling it twice as was necessary to stow it in the waste. As a result, about one car of dirt was sent to the surface with every three or four cars of coal hoisted.

Insufficient Packwalls Bring Disaster

Knowing that the ultimate collapse of the workings was inevitable, I still persisted in urging the building of substantial packwalls and the stowage of the waste, but my efforts in that direction were of little avail. Not only did the poorly built packs and half filled gobs permit the short-circuiting of the air and destroy the circulation at the working face, but there was every evidence that greater trouble was approaching, although the management appeared to be perfectly satisfied that everything was working well.

On arriving at the mine one morning, not long after, the night fireboss informed us that the face of one section containing twenty rooms had completely closed during the night. The same thing happened to another section a few days later. One can readily realize the time and money that it was then necessary to spend in

order to reopen these closed sections and restore their normal producing capacity. Instances such as this, show that the success of a longwall proposition depends on thorough workmanship and experience in the work.

Midlandvale, Alberta, Canada. STEPHEN DAVIES.

Electric Firing, Past and Present

The introduction into the mines of the practice of firing blasts with electricity met with the same opposition as other mechanical devices. This early prejudice, however, has largely given way to suggesting means that will render electric firing more safe.

NOT long ago a writer in *Coal Age* made the suggestion of soldering together lightly, the two lead wires of an electric fuse at a point a short distance from their ends, the purpose being to short-circuit any current that would otherwise reach the detonator before the charge was prepared for firing.

Reading this suggestion carried my mind back to the days when this method of firing shots in mines was in its infancy. Many a time have I listened to a heated argument between old miners regarding the feasibility of firing shots with electricity. At that time the subject of electric firing was looked upon in the same manner as other mechanical devices. Its introduction into the mines was opposed by the strong prejudice of miners who were prone to regard every such attempt with suspicion. It required continued effort on the part of the management of the mines to overcome this prejudice.

One instance that I recall happened when I was a boy. A rock tunnel was being driven in a mine where all the blasting was done by fuse. The men driving this tunnel were experienced "sinkers," as they were called because they had gained their experience in the sinking of shafts and slopes. One day the contractor brought into the mine an electric firing device. He told the shiftboss that hereafter, all shots were to be fired by electricity. When this came to the knowledge of the men they all went out on a strike, and it required much persuasion to induce them to return.

SUPERSTITIOUS DREAD OF ELECTRICITY

When the first round of holes to be fired by the electric battery were prepared the wires connecting the shots were extended from the face of the tunnel out to the battery at the foot of the shaft, a distance of more than 1,000 ft., I should judge. The men appeared to be more afraid of the battery than of the shots to be fired. It was many months before anyone would go within fifty feet of the battery, except the shiftboss who did the firing. The men regarded the word "electricity" as something uncanny.

However, time has worked wonderful changes and today, the humblest worker in the mine is familiar with and shows no dread of the many electrical appliances installed. Every suggestion intended to increase the safety of these appliances is regarded with interest.

Referring again to the suggestion previously mentioned regarding the soldering together of the ends of the two lead wires of an electric fuse, there is little doubt but that this would be a step in the direction of increased safety. At the same time, what is of far greater importance, I believe, is to keep the firing cable away from the battery and from all other sources of accidental contact with live wires. To this end, let me say that the firing cable should be kept on the spool and not laid along the entry when the shot is being prepared. Further, the battery should be kept under lock and key until it is needed for firing.

In my opinion, where this is done and the firing cable is kept wound on the spool until the shot is fully prepared, there will be little danger of a premature explosion by accidental contact with some source of electricity. I judge from the statement made by the writer to whom I have referred, that he has in mind a cable lying at the side of the road and extending from the place where the shots are to be fired back to the battery, which is not a good plan.

Plains, Pa. RICHARD BOWEN.

Ratio of Carbon Dioxide to Oxygen in Normal Breathing

The amount of oxygen consumed in breathing is but a fraction of what is taken into the lungs, the proportion depending on conditions of rest or exertion.

PERMIT me, in the interest of accuracy, to call attention to a misleading statement that occurred in the interesting reply given to an inquiry regarding the capacity of the lungs and the amount of air inhaled and percentage of carbon dioxide in the exhaled breath in the issue of *Coal Age*, Oct. 7, p. 758.

The statement to which I refer reads as follows: "Practically, the volume of carbon dioxide in the exhaled breath is equal to that of the oxygen in the air inhaled, or say one-fifth of the tidal air."

Undoubtedly what the editor intended to convey was the fact that the volume of carbon dioxide exhaled is practically equal to that of the oxygen consumed in the lungs, which is only a portion of that in the air inhaled.

A person while performing work or undergoing other physical exertion will consume a larger proportion of the oxygen of the air he inhales than when at rest. But even then much of the oxygen is expelled in each exhalation.

For a full and comprehensive report on the respiratory exchange of man, under various degrees of exertion, allow me to refer to the tables found on pages 26 and 27 of Technical Paper 82, of the United States Bureau of Mines, entitled "Oxygen Mine Rescue Apparatus and Physiological Effects on Users." These tables show that even though the tidal volume of air passing in and out of the lungs might be as much as 70 liters (of which, of course, only approximately 20 per cent or 14 liters would be oxygen) only, roughly, 3 liters of oxygen would be consumed and approximately the same amount of carbon dioxide produced.

Pittsburgh, Pa. GEORGE C. NELMS,
General Sales Manager,
Mines Safety Appliance Co.

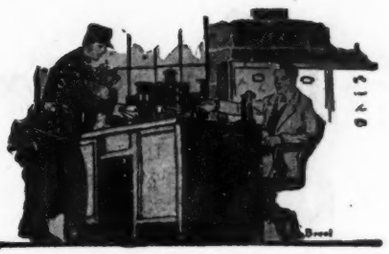
[We are pleased to have attention drawn to this inadvertence. The statement on page 758 should read as follows:

Practically, the volume of carbon dioxide in the exhaled breath is equal to that of the oxygen consumed, or say 1/40 of the tidal air passing in and out of the lungs of a person at rest, since the air exhaled when a person is at rest contains about 2½ per cent of carbon dioxide. Under violent exertion the oxygen consumed and carbon dioxide exhaled may reach 6½ per cent, or form about ⅛ of the tidal air.—EDITOR.

Inquiries of General Interest

Answered by

James T. Beard



Engine-Plane Haulage

Estimating, approximately, the power required to hoist a given load up an incline of a given length and grade; also, the size of rope and diameter of drum or sheave wheel required.

ASSUMING an incline 365 ft. long, having a grade of 15.5 per cent, what horsepower of engine, size of rope and drum or sheave wheel, will be required to hoist a load of twelve cars, total weight 25 tons, up this incline, using a single rope for hoisting the loaded trips and lowering the empty cars. MINING ENGINEER.

Central City, Ky.

This is what is called an "engine-plane haulage" and, from the statement made, it must be assumed that the load hoisted is unbalanced, a single rope being used in hoisting and lowering the cars.

The power required to make the hoist is shown by multiplying the sum of the track resistance and the grade resistance, in pounds per ton, by the speed of hoisting, expressed in feet per minute, and dividing the product by the efficiency of the engine, expressed as a decimal, times 33,000.

The track resistance, estimated in pounds per ton of moving load, may vary from 10 to 50 lb. per ton, depending on the style and condition of the car equipment and track. Assuming the cars are mounted on roller bearings and the track is in good condition, the track resistance may be taken as 20 lb. per ton.

Without serious error in this case, the grade resistance can be taken as 20 lb. for each percent of grade, making the sum of the track and grade resistances $20 \times 25 + 20 \times 15.5 = 810$ lb. This total resistance represents the pull of the loaded trip on the rope. But, in order to allow for the weight of the rope when the trip is at the bottom of the incline, we will estimate this pull at the drum as, say 1,000 lb.

Using a factor of safety of five, in determining the size of rope required, gives a breaking strain of $(5 \times 1{,}000) \div 2{,}000 = 2.5$ tons. Then, since the breaking strain of a one-inch, cast-steel, six-strand, seven-wire, haulage rope is 32 tons, the diameter of rope required in this case is $d = \sqrt{2.5/32} = 0.28$ in. To allow for the wear on the haulage rope, we will use a $\frac{1}{2}$ in., cast-steel, wire rope.

In order to obtain the best results in prolonging the life of the rope, the diameter of the winding drum or sheave wheel should not be less than 60 times that of the rope, which makes the minimum diameter of drum, in this case, $60 \times \frac{1}{2} = 30$ in. or $2\frac{1}{2}$ ft. A larger diameter of drum or sheave will lengthen the life of the rope.

Now, assuming a speed of hauling of, say 8 mi. per hr., or $(8 \times 5{,}280) \div 60 = 704$ ft. per min.; and taking the efficiency of the engine as 80 per cent, the power of the engine required for making this hoist is:

$$H = \frac{1{,}000 \times 700}{0.80 \times 33{,}000} = 26.5, \textit{ say } 30 \textit{ hp.}$$

To make due allowance for increased friction and bad condition of track or rolling stock, it will be well to install a 40- or 50-hp. engine for this hoist. It is always advisable and important to have an excess of power available to meet any emergency that may arise. If the highest efficiency is to be attained an engine should not be operated at the limit of its capacity, but a fair margin should be allowed in order to obtain the best results and provide for the further development.

Coking Qualities of Coals

The only test to ascertain the coking quality of a coal is the practical test. The analysis of a coal is no reliable indication of its coking quality, and is only suggestive of the approximate yield in case coking takes place.

FOLLOWING is the analysis of a coal taken from a Pittsburgh 6-ft. seam, located in Lewis County and known as "Lewis Block," in West Virginia. I am anxious to learn the coking quality of this coal and its value. The coal gives by analysis, the following:

Water, 1.35 per cent; volatile matter, 38.65 per cent; fixed carbon, 49.38 per cent; ash, 10.62 per cent; sulphur, 1.63 per cent; phosphorus, 0.025 per cent. The heating value of the coal is 13,287 B.t.u.

Uniontown, Pa. OPERATOR.

The analysis of a coal does not furnish any reliable indication of its coking quality. It is said to be suggestive of the proportionate yield in case coking takes place, however. Whether a coal will coke or not can only be positively determined by an actual test. Sometime ago the *Colliery Engineer* published what was claimed to be a practical indication of the relative coking quality of a coal. The method suggested was simple and one that could be made in the field. It was as follows:

Grind a small sample of the coal in a mortar sufficiently fine to pass through a 100 mesh. Pour out the loose material and observe the result. If considerable of the remaining portion of the powdered coal adheres to the mortar and the pestle it is an indication that the coal will coke well; but if the mortar and the pestle are clean after grinding, it can be assumed that the coal will not coke. In other words, the coking quality of a coal is claimed to be indicated, more or less correctly, by the degree with which the fine material adheres to the mortar and the pestle after the grinding.

In the process of coking it is assumed, in estimating the approximate yield of a certain coal from its analysis, that all the ash and generally all the fixed carbon remains in the coke. In that case, the sum of the percentages of these two constituents would represent the approximate yield of coke. In the Connellsville region, it is found that about 60 per cent of the sulphur also remains in the coke. If the volatile matter in the coal is not sufficient, however, to furnish the heat required for the coking of the coal some of the fixed carbon will be consumed and the yield of coke diminished.

Examination Questions

Answered by

James T. Beard

Mine Bosses' and Firebosses' Examination, Indianapolis, Ind., 1920

(Selected Questions.)

QUESTION—*Give five causes of accidents which occur on haulageways and methods to prevent them.*

ANSWER—1. The use of haulage roads as travelingways, without maintaining a proper clearance space or refuge holes and keeping these unobstructed. 2. An improper system of haulage or no system at all where drivers and motormen are prone to take chances. 3. Bad track conditions and poor rolling stock, causing breakdowns and wrecks. 4. Improper timbering of haulage roads and lack of careful inspection to prevent possible roof falls on the roads. 5. Incompetent and reckless drivers and motormen who have a disregard for safety rules and regulations.

QUESTION—*Give five safety precautions a miner should observe on going to his working place at the face.*

ANSWER—1. Observe that the fireboss has examined the place and made his mark on or near the face of the coal. 2. Carefully examine the roof and the face of the coal to detect any dangers that may exist. 3. Set any timber that may have been discharged by the shots fired the night before, or that may be needed to support the roof and make the place safe for work. 4. Replace any brattice that may be torn down, and see that the necessary quantity of air is traveling and sweeping the face of the coal, so that there is no accumulation of gas or smoke in the place. 5. Observe that all shots have been fired, and see that each car is properly spragged or has its brake set, before proceeding to load coal.

QUESTION—*What are the causes of dust explosions in a mine and what is the best-known method to prevent them?*

ANSWER—The use of excessive charges of powder in blasting, which pulverize the coal, and the failure to load out the fine coal and slack and keep the working face free from accumulations of dust contribute largely to the conditions that invite dust explosions. Shots that are not properly placed and tamped or are overcharged, producing a blownout or windy shot, or the firing of two or more shots at the same time in the same place, may cause a dust explosion, particularly in the mining of a soft coal that is highly inflammable. The danger is much increased in machine mining.

When working such coal, dust-proof cars should be used and every precaution taken to prevent the accumulation of dust on the roads. An effective sprinkling system should be employed and a suitable method of humidifying the air installed to prevent the drying out of the mine. In all such cases, strict regulations must be made and enforced in regard to blasting. Competent shotfirers should be employed, whose duty should be to examine, charge and fire all holes drilled by the miners, except such holes as are, in their judgment, unsafe for any reason.

QUESTION—*In what way would you provide for the protection of your men from falling roof?*

ANSWER—A systematic system of timbering should be employed that is adapted to the particular conditions in the mine. Strict regulations should be made and enforced regarding the timbering of all working places, roads and travelingways, which should be regularly and thoroughly inspected by the foreman and his assistants to see that the miners take due precautions for their own safety. Every possible means should be used to impress on the men the fact that they are largely responsible for their own safety while at work in the mine.

QUESTION—*What is the best and safest way to detect the condition of the roof?*

ANSWER—The roof must be carefully examined to detect any slips or fault lines. Too much reliance must not be placed on sounding the roof after the usual manner employed by miners. However, when sounding the roof with a pick, the miner should hold his free hand against the roof to detect any tremor or vibration in the loose slate. A thorough knowledge of roof formation and conditions is important. Particular attention must be given to boulders, horsebacks and pot-bottoms, which are always dangerous.

QUESTION—*What is the danger arising from working a mine adjoining an abandoned mine? What is the law regarding the method of approaching abandoned mines?*

ANSWER—When working a mine that adjoins an abandoned mine, there is always the danger of penetrating the old workings, which may contain accumulations of water or gas that would endanger the work in the new mine. It is never safe to place absolute reliance on any map or survey, but the precaution must be taken of keeping advanced drillholes in the face of the live workings when approaching the workings of an abandoned mine.

Section 14 of the Indiana Mine Law provides that places driven toward abandoned workings, shall not exceed eight feet in width and that drillholes shall be kept not less than three yards in advance of the working face, one hole at or near the center of the face and sufficient flank boreholes on each side.

QUESTION—*How would you proceed to rescue a person caught by a fall of roof?*

ANSWER—It is not possible to lay down any absolute rule to be followed in such a case. While due caution is always necessary, some risk must be taken if the man is to be rescued. It may be evident, at once, that the man has killed instantly by the fall, in which case it is unwise to take any unnecessary risk in recovering the body. If there is the slightest chance, however, that life still remains no time must be lost in extricating the victim from his perilous position. It will seldom be safe to attempt setting any timber to secure the roof from further fall, before dragging out the man, but help must be quickly summoned and every effort made to rescue him.

Coal Statistics Shown to Have National Importance—I

Rapid Change in Output and Distribution Facts Makes Frequent Measurement Necessary to Government and Industrial Planning—Accurate Records Indispensable Now in Laying Embargoes and Priorities and in Solving Transportation Difficulties

By F. G. Tryon*

THE high prices of coal which have prevailed in the United States since the withdrawal of the maximum prices on April 1, 1920, and the apprehension of a fuel shortage voiced both in this country and in Canada have lent new importance to statistics of coal production and distribution. For many facts about the coal industry, such as labor, wages, mining methods, reserves, costs, investment, and profit, annual measurements are frequent enough, but the facts of production and distribution change so swiftly that monthly or even weekly and daily measurements of their broader aspects are necessary for intelligent planning either by the industry or by the Government.

The need for operating statistics of the coal industry is always with us, but at a time like the present it becomes imperative. Decisions of policy, such as the laying of an export embargo and the execution of specific plans formulated to carry out the policy, require accurate records, promptly available, of how coal is moving from mine to market. There is every prospect, moreover, that the need for such operating records will be acute for months to come. Overcoming the transportation disability which has been the limiting factor in coal production since the coal strike of 1919, and rebuilding consumers' stocks of coal will take months.

Complications Cause a Need for Figures

The complicating factor of the demand for export overseas, which though not the prime cause of the present high prices has yet had a disturbing effect on the distribution of the coal produced, is likely to continue for years. As long as it does, even superabundance of coal in the interior will not solve a recurring problem of distribution at tidewater points—a problem which will require accurate statistics available at frequent intervals.

For the sake of brevity, bituminous coal only will be considered in this paper. This is not because anthracite is unimportant. Anthracite has at length achieved a condition of stability, and, though exported in large amounts to Canada, is not shipped overseas in significant quantities, and its market in the United States is confined to twenty-three states in the North and East. The reserves underground are limited, the production is relatively constant, and its distribution and consumption present few new problems. The mining of anthracite yields a major product—the domestic sizes—and a byproduct—the fines or steam sizes. The one cannot be produced without the other, and the problem of anthracite distribution may be summed up in the statement that there is a chronic shortage of the domestic sizes and a chronic oversupply of the steam sizes.

In sharp contrast to anthracite, bituminous coal is mined in thirty states and produced in bewildering variety. Each field has its own market, determined by the quality of its coal and by the freight rate, and the competition between fields is keen. Bituminous mining is normally beset by an uncertain demand. Most fields are affected by a seasonal fluctuation in demand, and all respond quickly to changes in the general tone of business. When the market is active, a shortage of transportation usually develops, and as a mine runs only when cars are available, its output varies greatly from day to day. These factors make the distribution of bituminous coal a complex and ever-changing variable which must be measured at frequent intervals.

How Weekly Production Is Estimated

The subject of production is treated in the weekly coal report of the U. S. Geological Survey, begun by C. E. Lesher in July, 1917. Weekly estimates of the total production of anthracite and bituminous coal and beehive coke are published, based in each case upon statements of the number of cars loaded by the railroads, collected either direct from the roads themselves or through the American Railroad Association.

The statistics of total weekly production may be regarded as adequate. We need also, however, at least monthly statistics of production by states and by fields. It is not enough to know the total output, for a shortage in one locality may exist simultaneously with a surplus in another, and yet because of transportation difficulties the surplus may be unavailable to meet the shortage. Furthermore, there is as great a variety of coals as of cloth, and it frequently happens that coals suitable for a special purpose may be in short supply when an abundance of fuel for other purposes exists. A feature of the coal market in the Northeast throughout the present year has been a scarcity of coals suitable for gas manufacture, and at seaboard a scarcity of the low volatile coal. It follows that current statistics of output, by fields, will at the same time yield a measure of the output by grades of coal. In an attempt to meet the need for current production statistics, by localities, the Geological Survey has begun the publication of monthly estimates of production by states, based upon railroad shipments. Certain technical difficulties in separating between one state and another the tonnage of coal originated on railroads loading in more than one state must be overcome, however, before the estimates can be brought to the accuracy desired.

Factors Limiting Production

Of scarcely less importance in intelligent direction of the industry are current statistics of operating conditions at the mines which will isolate the factor limiting production in each district, and thereby make possible the application of remedial measures. Pioneer work in this direction has been done by Mr. Lesher of the Geolgical Survey in the system of weekly mine reports established during the war and maintained since.

*U. S. Geological Survey.

The arrangement is purely a voluntary one, which has, however, received generous support from a large number of producers of coal.

UNDERLYING PURPOSE OF WEEKLY REPORTS

The weekly operating reports have established their usefulness as an indicator of the particular factor to which attention must be directed if production is to be brought to a maximum. They are essentially control statistics, possessing incidental value as permanent records, but chiefly useful as a barometer of change from week to week. It is unsafe, for example, to cumulate the losses attributable to a particular factor from one week to the next. Elimination of one factor limiting production may bring into play others whose influence has hitherto been obscured by the first.

(To be continued next week)

Insurgents Attack Miners' Union

SEVERAL insurgents at the Pennsylvania Coal Co.'s operations are greatly incensed against the United Mine Workers of America, asserting that the union is preventing men in the northern section of the anthracite region from entering the organization until after Jan. 1. The allegation is that by delaying the admission of the men to the union it will be possible to prevent them from voting under the rule that requires that a voter shall have been a member for six months prior to the election.

Nor is all peaceful in the bituminous regions, for on Nov. 7 impeachment of the executive officers of the Pittsburgh region (No. 5) was demanded in a resolution unanimously adopted at a meeting of the "rebel" contingent in the Fort Pitt Hotel, Pittsburgh, Pa. John R. Walker, of Springfield, Ill., attacked the local executive officers for having failed to recognize the convention. A committee was appointed to notify the executive officers of the trial, and then if they refuse to attend the convention will try them in their absence.

Sales Realization and Cost for 535 Coal Operators During May and June Compared

Federal Trade Commission Report for June Shows 3c. Decrease in Cost Per Ton and an Increase of 20c. in Sales Return, Making an Increase of 23c. in Margin—Decrease in Cost Attributed to Rise of 828,742 Tons in Production

COMPARISON of sales realizations and reported costs during June, 1920, with May, 1920, for 535 identical operators, according to the bulletin of the Federal Trade Commission, shows the relative change indicated in the table below. The table also shows the average number of days worked in June, 1920, which was nineteen, as compared with the monthly average for May, which was seventeen days.

production during 1918 as a base, they are grouped according to the relative decrease or increase in their production for the first quarter of 1920 and for April and May, 1920, respectively, and their total f.o.b. mine cost increases or decreases were thus shown in relation to change in production. A 14-per cent increase over the wage scale in effect throughout 1918 was made in November, 1919, and was in general effect dur-

COMPARISON OF JUNE, 1920, SALES REALIZATION AND REPORTED F.O.B. MINE COST WITH MAY, 1920, FOR 535 IDENTICAL OPERATORS BY GENERAL COMPETITIVE REGIONS

		June, 1920					May, 1920						
General Competitive Regions	No of Operators	Production, Tons	Average Days Worked	Sales Realization	Reported F.O.B. Mine Cost	Margin (a)	Production (Tons)	Average Days Worked	Sales Realization	Reported F.O.B. Mine Cost	Margin (a)	Increase (+) or Decrease (—) of Reported Cost in June From That in May	
Central Competitive "Interstate"	156	2,884,822	19	$3.20	$2.37	$0.83	2,395,504	16	$2.94	$2.39	$0.55	—$0.02	—1 per cent
Eastern Adjacent	136	1,624,676	18	3.79	2.71	1.08	1,503,751	16	3.50	2.70	0.80	+ 0.01	....
Western Adjacent	34	434,870	19	3.29	2.54	0.75	390,537	16	3.01	2.60	0.41	— 0.06	—3 per cent
Southern Appalachian	62	969,950	20	3.69	3.16	0.53	960,395	19	3.45	3.14	0.31	+ 0.02	+1 per cent
Southwestern "Interstate"	85	485,711	19	3.78	3.53	0.25	468,354	18	3.69	3.55	0.14	— 0.02	—1 per cent
Rocky Mountain	62	1,782,128	21	3.25	2.75	0.50	1,634,874	19	3.15	2.76	0.39	— 0.01	....
United States	535	8,182,157	19	3.43	2.69	0.74	7,353,415	17	3.23	2.72	0.51	— 0.03	—1 per cent

(a) "Margin" is *not* the same as profit.

The decrease of 3c. per ton in the average reported June cost of the 535 operators, with the increase of 20c. in their sales realization, resulted in a 23c. increase in margin for June, 1920, as compared with May, 1920. The decrease in the June cost of these operators (1 per cent less than May) is to be attributed to their increase of 828,742 tons, or 11 per cent, over May in production.

In order to throw light on the effect which a change in the production tonnage has in bringing about a change in costs, tabulations were made by the Federal Trade Commission in the April and May bulletins for a slightly larger number of operators than are covered in this bulletin for June. Taking their average monthly

ing the first quarter of 1920. The 27-per cent wage increase awarded by the U. S. Bituminous Coal Commission (which included the 14-per cent increase) went into effect April 1, 1920. In the April and May bulletins these tabulations of the increase in total reported costs for those groups of operators whose production changed least showed reported cost increases in those months as compared with 1918 of 47c. per ton, or 22 per cent, and 51c. per ton, or 23 per cent, respectively. The increased cost due to wage advances since 1918, as nearly as it is possible to measure it from these tabulations, may safely be said to average somewhat less than 50c. a ton.

Morrow Derides Calder Scheme for Federal Control of Coal Industry

IN AN address before the Eastern Ice Manufacturers' Association at Atlantic City, Nov. 11, J. D. A. Morrow, vice-president of the National Coal Association, of Washington, declared that no emergency exists in the bituminous-coal industry to call for federal control of the mines, such as that hinted by Senator Calder, of the Senate Committee on Reconstruction, a few days ago. The bituminous-coal industry, through its handling of the soft-coal shortage emergency, Mr. Morrow said, has shown that it is able to meet its own problems.

Mr. Morrow urged patience on the part of the public toward business enterprises throughout the country, which, he said, have not yet recovered from the economic effect of the war. The coal industry, he said, had been unable, up to a short time ago, to catch up with the necessary output of coal to meet the country's requirements because of inadequate railway facilities.

In his address Mr. Morrow said: "There is nothing in the present situation in the coal industry to warrant any such regulation of the industry as that suggested by the Calder committee. I think everyone here knows full well that American social life and business life have been conducted with as little interference from the Government as possible, leaving the individual free to conduct his own affairs in his own way. It is that freedom which has enabled this country to offer the wonderful opportunities to its citizens which it has afforded. I think everyone will admit that governmental interference, regulation or control of any business is so impractical and fraught with so many disadvantages and evils and is so inevitably certain to result in higher costs and operating expenses to consumers that government control or regulation ought to be imposed on no business except as a last resort.

Unsettled Conditions Only a Passing Phase

"The conditions in the bituminous-coal industry which have caused consumers trouble in obtaining their supplies and have given opportunity for speculative prices in this commodity are but a passing phase of the war readjustment. We all understand perfectly well that lack of transportation is the basic cause of the trouble. Well, the remedy for that difficulty is not regulation of coal but improvement of transportation facilities. The railroads are making vigorous efforts to bring this about.

"If the railroads are given an opportunity to recover from the ill effects they suffered during the war there is no doubt whatever that they will furnish all the transportation this country needs. When that is done people need have no fear as to future sufficiency of their coal supply or the reasonableness of prices.

"The public needs to be patient with business enterprises in the United States which have not yet completed after-the-war adjustment. We need patience and hard, common sense in the existing condition of affairs and not theoretical, socialistic governmental regulation. If business men are given an opportunity to work out these problems they will emerge successfully from the economic chaos brought upon the country by the war."

Dwelling upon high speculative prices that existed in some of the soft-coal fields during the shortage Mr. Morrow said:

"The unfortunate feature of the situation was that it afforded an unusual opportunity for speculators who never had had anything to do with the coal industry before to inject themselves into the market and accentuate an already acute situation. The National Coal Association, representing the responsible bituminous-coal producers of the United States, has had no sympathy at any time with these speculative abuses. The association has made every effort to prevent the misuse of transportation facilities for the purpose of speculating in coal by anybody.

"It is only in the last few months that we have had enough cars to transport coal. In the meantime the production of coal has risen to 12,000,000 tons a week and prices have begun to decline so that they are now much below the levels prevailing six weeks ago.

"If the priority orders of the Interstate Commerce Commission are continued until Dec. 1 I have no doubt that production will be sufficient during the remainder of the winter, together with the reserves that will have then been accumulated, to carry the country through to next spring without any difficulty. Therefore there is no reason whatever for anyone at the present time to pay unreasonable prices of soft coal."

Railroads Make Records in Moving Freight

A NEW record for 1920 in the number of cars loaded with commercial freight on railroads throughout the United States was made during the week which ended Oct. 23, according to reports announced Nov. 11 by the car service division of the American Railway Association. The total for the week was 1,010,961 cars, which was within 500 cars of the peak recorded in 1919. This total was 5,298 cars more than were loaded during the previous week, 33,910 cars greater than the corresponding week of 1919 and 90,850 cars greater than during the same period in 1918. This was also the third successive week that the total had exceeded the million mark.

Except for the Central Western and Pocahontas districts increases as compared with the same week in 1919 were reported by all districts, while the number loaded in each district during the week of Oct. 23 exceeded the number loaded in the same districts during the corresponding week in 1918. Increases were shown, as compared with 1919, in the number of cars loaded with coke, forest products, ore, merchandise and miscellaneous freight, although decreases were shown in the number loaded with grain, grain products and coal.

Car loadings in the week ended Oct. 30 dropped to 973,120.

During the twelve weeks from Aug. 1 to Oct. 23 inclusive cars loaded with revenue freight totaled 11,654,567, which is believed to be without parallel in American railroad history. This was an increase over the corresponding period in 1919 of 362,902 cars and 223,100 over the same weeks in 1918. During the same period this year 2,513,138 cars were loaded with commercial coal as compared with 2,412,-249 cars for the same weeks last year.

Statistics compiled by the Bureau of Railway Economics, according to *Railway Age* disclose the fact that in August the railways moved more freights not only than in August of any previous year, but more than in any previous month in any year in history This seems a conclusive answer to charges which have been made by W. G. McAdoo and others that the railways have been inefficiently operated since they were returned to private control, and that they can be operated with maximum efficiency only under unified Government control. The number of tons of freight moved one mile in August was 42,706,000,000. The nearest approach to this ever made before was in August, 1918, when the number of tons moved one mile was 40,776,000,000.

The detailed figures regarding the way in which this record-breaking achievement was accomplished are interesting and significant in view of the efforts the railways have been making for some months to increase efficiency of operation. The average miles each freight car was moved daily in August was 27.4. This was the greatest mileage ever attained in any month except in May, June and July, 1917, under private operation. In other words, in none of the twenty-six months of Government operation was this record for car movement ever equaled. The average tons handled in each loaded car in August, 1920, was 29.8, a record exceeded only in the months of July, August and September, 1918.

The best test of the efficiency with which the country's freight cars as a whole are being utilized is the average number of tons of freight moved daily with each car. The average number of tons moved one mile daily with each car in August, 1920, was 526. This record has been surpassed only in August and September, 1918, when the average load per car was the highest ever reached, and in June, 1917, under private operation, when the average miles per car per day was almost the highest ever reached.

Milwaukee Rail Receipts Show Steady Gain

RECEIPTS of coal at Milwaukee from all sources from the opening of navigation up to Nov. 1, 1920, were as follows:

	—By Cargo Vessel—		—By Car-Ferry—		— By Rail —		Grand
	Tons, Hard	Tons, Soft	Tons, Hard	Tons, Soft	Tons, Hard	Tons, Soft	Total, Tons
April	17,500	18,500	12,184	47,887	.....	64,967	161,038
May	109,600	136,462	19,204	21,531	.....	214,246	501,043
June	138,771	192,573	3,546	22,015	.....	106,186	463,091
July	104,690	259,459	5,082	18,228	350	112,237	500,046
Aug	126,206	401,559	4,026	13,408	2,800	73,240	621,239
Sept	76,940	487,757	4,547	15,556	224	100,434	685,458
Oct	127,656	425,612	2,311	13,992	379	57,801	627,751
Total	701,363	1,921,922	50,900	152,617	3,753	729,111	3,659,666
1919	757,419	2,856,414	48,036	145,271	2,081	296,899	4,106,120
Decrease	56,056	934,492	2,864*	7,346*	1,672*	432,212	546,454

* Increase.

There were about 650,000 tons of soft coal on the docks when navigation opened in the spring of 1919. The docks were bare, however, when the first cargo was received this year.

Indiana Operators Will Produce Amounts Specified by Fuel Commission

EARLY reports received by the Indiana Coal and Food Commission from coal-mining companies indicate, it was said at the commission's office, that many mine operators will make every effort to comply with Order 8, recently issued by the commission, directing the operators to produce for Indiana domestic consumption specified amounts of coal.

Additional direct orders and even seizure of mines may result if operators refuse to obey the commission's order. The commission has authority under the law to direct a certain mine to provide a specified amount of coal for a certain consumer, and if such order were not complied with Governor Goodrich, it is believed, would not hesitate to seize the mine.

Reports to the commission that certain jobbers and operators have not complied with the commission's margin and price-fixing orders have caused investigations to be started, and if evidence justifies the commission will cite the offenders to appear before it and show cause why their licenses should not be revoked.

Approximately a hundred orders directing certain coal mining companies in Indiana to produce coal for certain consumers have been issued by the state special coal commission. The orders name the companies, prescribe when, to whom and for what purposes prescribed amounts shall be mined and shipped. The orders were issued to relieve coal shortages for certain communities, schools, utilities and hospitals.

An emergency order issued by the State Special Coal Commission must be filled directly by the coal-mining company receiving the order and the entire transaction is to be between the operator and designated consumer, and is not through the operator's selling agent, the commission has ruled. This action was taken by the commission when it was reported that some of the emergency orders received by the companies had been filled through the selling agents. The commission objects to the delay and bringing in of a third party.

The Indiana public service commission, which by law is directed to see that mines receiving emergency orders get cars to ship the coal, has received notice from the coal commission of the emergency orders, and John W. McCardle, vice-chairman of the service commission, has taken up with F. H. Worthington, of Terre Haute, Ind., superintendent of the St. Louis Branch of the Pennsylvania lines, complaints that some of the mines along the Pennsylvania have not had sufficient cars to fill the coal commission's orders. No other transportation complaints have reached either commission, it is said.

E. I. Lewis, chairman of the service commission, said that in event the railroads do not provide sufficient cars to meet the requirements of the mines receiving the emergency orders the service commission will organize itself to carry on special activity along that line, as it is directed by law.

The coal commission Nov. 4 heard seven coal mining companies' appeals for reclassification in groups which will permit them to obtain higher prices for their coal. The companies are: Ridge Coal Mining Co., Chicago; Lower Vein Coal Co., West Terre Haute; Owensburg Coal Co., Bloomfield; J. Wooley Coal Co., Evansville; Otter Creek Coal Co., Brazil, and the Supply Coal Co., Bicknell. The commission has reclassified no mining companies other than a few it permitted to go into the Brazil block class.

Less than fifty companies, it was said at the offices of the commission, complied with the commission's order No. 8 for the first week of the order's application. There are approximately 280 companies in the state. The order besides prescribing tonnages to be sold in Indiana, required the companies to report their Indiana shipments and deliveries for the week ended Oct. 23. The commission received about twenty replies thus far supplying the required information.

The latest bulletin issued by Jesse E. Eschbach, chairman of the fuel commission, shows that coal-mining companies which have filed reports sold 101,208 tons of coal in Indiana last week out of a total production of 343,539 tons.

Subpœnas in thirty-seven suits brought by retail coal dealers in northern Indiana against the retail selling margins of $2.50 and $2.40 established by the commission were served on Mr. Eschbach Nov. 3.

Williamson Operators Not Signing Scale

THE statement recently made by C. F. Keeney, president of District 17, United Mine Workers of America, that twenty-seven operators in the Williamson field had signed contracts with the United Mine Workers is untrue, according to a statement made by the Williamson Operators' Association. The fact is, as stated by the secretary of that body, that three companies with mines having railroad tipples have made contracts with the union and two of them are extremely small producers. The balance of the operators, it is said, are just as determined as ever that they will not recognize the United Mine Workers. The situation in the Winding Gulf field is steadily improving as shown by the performance report of mines in the affected district.

Hold Miners' Pay for Political Purposes

ALL members of the United Mine Workers in Districts 17 and 29, both in West Virginia, were assessed for the support of the candidate of the Non-Partisan League, Samuel B. Montgomery, the main figures in that party being C. F. Keeney, president, and Fred Mooney, secretary of District 17. The miners in many instances have not relished being assessed for political purposes and have openly rebelled, declining to pay any such assessment, stating that they joined the union for the labor benefits they expected to derive from it and not for the purpose of supporting political candidates. One company in the New River field which checks off for general labor assessments declined to check off for the benefit of the League. There was a strike at some of the company's mines, but it was of short duration.

Belgian Miners Strike for More Pay

CONSEQUENT on the refusal of the Coal Owners' Association to raise the wages of their mine employees five francs (49c.) per day, 50,000 coal miners in the Charleroi district of Belgium went on strike on Monday, Nov. 1, causing the Government to prohibit the export of coal and to restrict the use of deliveries of German coal to public utilities, vitally important industries and domestic use. Stocks are available to keep the railroads and the public utilities running for six weeks. The coal miners in the central district resumed work on Nov. 10, but the Charleroi men still remained out. Negotiations, however, are under way.

Franklin Miller and Colonel Wentz Engage in Lively Tilt On Integrity of Coal Industry

National Coal Association President Asserts That Personally He Made Every Effort to Have Obligations Observed—Maintains That All Fuel Contracts Entered Into in Good Faith Are Equally Binding

CONTRACT obligations and the integrity of the coal men in meeting those obligations was the subject of a spirited dialogue at the hearing before the Reconstruction Committee of the U. S. Senate on Nov. 4. Both Senator Calder and his technical adviser, Franklin Miller, took the coal industry to task for failure to live up to its contracts and Colonel Wentz, president of the National Coal Association, who was on the stand, while admitting in part the waywardness of the coal men in this regard, said he had personally done all that he could to help the situation.

Should Work for Keeping of Contracts

Mr. Miller asked Colonel Wentz if, in keeping with the great duty of man to man and the fulfillment of commitments upon which one man has to depend on another, it would not be well to endeavor through his strong association to devote its energies to gathering facts, reasons and arguments as to why contracts should be kept; to send that out to his membership; and in the event of a seller being unable to make full weekly deliveries because of strikes or other unavoidable causes, that the seller agree that the amount of coal delivered under his contract each week equal in per cent that delivered to any other of the seller's contract customers, and that the seller should avoid all delivery of spot coal or speculative coal or export coal while man to man he is under obligation to make good a commitment.

Colonel Wentz replied that "spot coal is all right. I am not speaking as president of the association. I am speaking as an individual operator. I never had any contract in my life which permitted me to ship any spot coal, and I never expect to make one. With regard to export coal, why is not a contract entered into in good faith with a French railroad as much of an obligation as a contract entered into in good faith with an American railroad? And if I did enter into such a contract and had a pro-rated delivery clause in my contract, would I not be liable for damages to the foreign road if I neglected to ship it a just proportion of my production, or would I not be liable to damages to the American railroad if I failed to ship it in just proportion to my production? I hardly see where the legal liability and moral responsibility differ."

Orders and Consignees Double Crossed

"Suppose you shipped it to both pro rata rather than shipping to spot market at higher prices?" Mr. Miller asked. "Interstate Commerce Commissioner Clyde B. Aitchison testified here Aug. 13, and when he was asked if it had ever been suggested that coal was being held back for higher prices or speculation he answered: 'I have not any doubt of it. There has been the greatest crossing of orders, double-crossing of orders and double-crossing of consignees and those who had contracts for the last ninety days that I have ever known about in my business experience. This is abundantly established. We have moved coal. It has been moved and delivered in such quantities that there ought not to be any occasion for panic. But there has been the excuse of car shortage and the excuse of labor trouble. The result has been that certain unscrupulous mine owners, I have no doubt, and perhaps certain brokers who have contracts with the railroads, with construction companies of one kind or another, with industries, with wholesalers and with retailers of coal have deliberately withheld the fulfilling of their contracts in order that they might have coal on the spot market.' Now, Commissioner Aitchison had been following this pretty closely, and this is his opinion and his testimony before our committee."

Colonel Wentz also condemned any such practice.

Reminding Colonel Wentz that this had been called to his attention Aug. 13, Mr. Miller asked if anything had been done to remedy it since that time.

"Personally," Colonel Wentz replied, "I have done everything I can to remedy it since that time. As I told you Aug. 13, as president of the National Coal Association, under the by-laws and rules of the association, I have not been permitted to discuss prices or contract conditions. That is, in my mind, one of the misfortunes of the Sherman Act."

Thereupon the chairman asked Colonel Wentz: "You do not believe that if you call together members of your organization and urge them to live up to their contracts so as to avoid this condemnation of the industry, to fulfill to the letter their agreements—the agreements that they made—that would be violating the law?"

Colonel Wentz did not think it sounded so.

The chairman said he would take it to the Senate and have it made immune, if it did.

Colonel Wentz thought that would be preferable. "It does seem absurd," he said, "but there have been so many instances—for instance, the hardwood lumber case; they went a little further, but lawyers differ so much as to just where you draw the line. But I do say that I have personally done all the work I can in that direction with every coal operator I could."

Proposes Method of Waking Up Operators

The chairman said it seemed to him that a copy of that testimony of Commissioner Aitchison should be sent to every coal operator in America and placed before each with the alternatives of control by a coal administrator or of the price or property, through Congress. That would wake them up, he thought.

Mr. Miller then asked Colonel Wentz if, in case the Attorney General gave an assurance that he could meet and discuss the fulfillment of contracts, he would feel the matter was of sufficient importance to propose to the National Coal Association that they amend the by-laws to the extent of enabling him to do so.

"If the Attorney General has the authority to take such action," Colonel Wentz replied, "and his successor will confirm that authority and not bring prosecutions—that is the trouble with the situation; if a succeeding Attorney General takes a different view he can bring prosecutions; it is a contract agreement affecting the law that you suggest; that is the size of it and that is the whole difficulty."

Colonel Wentz in Statement Denies Any Admission of Wrongdoing

IN A statement issued Tuesday, Nov. 9, in reply to statements emanating from the Calder Committee on Reconstruction, Colonel D. B. Wentz, president of the National Coal Association, emphasized the point that bituminous-coal operators, acting through the National Coal Association, long ago took steps to eradicate abuses in the industry which were attacked by the Senate committee. Colonel Wentz made it clear that, due to efforts of the operators toward increasing the output of coal at the mines, prices have materially declined within the last few weeks and will continue to drop.

In his statement Colonel Wentz said: "A wholly wrong impression has gone out to the public through statements emanating from the U. S. Senate Committee on Reconstruction, of which Senator Calder is chairman, pertaining to high prices in the bituminous-coal industry. Broadly

the entire industry has been accused of 'practicing gross extortion on the whole public of the United States.'

"The Senate committee asserts that 'wrongdoing has been admitted by D. B. Wentz, representing the National Coal Association; by Commissioner Clyde B. Aitchison, of the Interstate Commerce Commission, and Daniel Willard, representing the railroads.' No such admission has been made by me nor do I understand that any such admission has been made by either of the others. So as to put the matter straight on the record, I wish to deny emphatically that there was any wrongdoing in any action taken by representatives of the National Coal Association, of the Interstate Commerce Commission or of the American Railroad Association in their efforts during the coal-shortage emergency to increase the production and shipments of bituminous coal and to obtain the movement of sufficient supplies to parts of the United States which were in dire need of coal.

"On the contrary, the priority orders issued by the Interstate Commerce Commission and the action taken by the railways and the coal producers, which have been indiscriminately attacked by witnesses before the committee, were eminently practical and right. Those orders have made it possible to overcome the deficit in coal output caused by the switchmen's strike of last spring and have been the direct means of averting a very serious shortage of coal during the fall and winter.

ALLEGES ATTEMPT TO INFLUENCE MR. TUMULTY

"It has been asserted by F. T. Miller, special assistant to the Senate Committee on Reconstruction, in testifying as a witness before the committee, that the influence of Joseph P. Tumulty, secretary to the President, was sought by officials of the National Coal Association to persuade the Interstate Commerce Commission to issue orders which would enable operators to 'dodge' contracts specifying lower prices than those prevailing in the open market during the shortage emergency. The allegation was made by Mr. Miller that the coal operators sought to manipulate the whole coal situation through their conferences during the summer and fall at the White House.

"This statement of Mr. Miller's is flagrantly false. It is true that officials of the National Coal Association endeavored to keep Mr. Tumulty intimately advised of conditions in the industry. This was done simply and solely that the President might be fully and accurately informed. Likewise information with respect to production and distribution of bituminous coal and operating conditions in the various fields was placed before officials of the Interstate Commerce Commission, of the American Railroad Association and of various agencies in Washington who were necessarily interested in the situation. We felt that they were entitled as public officials, giving consideration to this vital question, to all the information we could give them.

"I am glad to see that Mr. Tumulty himself has given the lie to the insinuation that his help was sought to give unfair advantages to the coal operators or to work against the best interests of the public.

RECOUNTS EFFORTS OF NATIONAL ASSOCIATION

"The joint statement of Senators Calder and Edge gives the impression that the National Coal Association and the coal industry have done nothing up to this time to put an end to abuses which the Senators attack. This impression is grossly misleading and unfair. The fact is that the National Coal Association months ago, through special committees, began an effort to eliminate various abuses that had developed during the shortage emergency, with the result that, through the co-operation of other branches of the industry, they have been generally eradicated."

After recounting the efforts of the National Coal Association to obtain increased car supply following the switchmen's strike, to eliminate reconsignment evils, speculative holding of cars under load at Tidewater and wagon-mine speculators Mr. Morrow continued:

"At my appearance before the Calder committee I explicitly stated that while high prices had prevailed in some of the bituminous-coal fields during the shortage emergency the rank and file of the responsible operators were not guilty of charging excessive prices. The fact is that ever since last spring from 70 to 80 per cent of the soft-coal output has been shipped from the mines at reasonable prices. The remainder of the product was largely that which fell into the hands of speculators.

"Had it not been for the consistent efforts of the bituminous-coal operators, as represented in the National Coal Association to overcome the shortage emergency throughout the summer and fall, the nation would now be faced with the calamitous prospect of a soft-coal famine during the winter. This contingency no longer need be feared. There will be ample coal and at reasonable prices for all."

Wages Received by Mine Workers Under New Anthracite Agreement

THE October issue of the *Monthly Labor Review*, issued by the U. S. Bureau of Labor Statistics, contains a complete discussion of the wage rates resultant on the agreement signed in conformity with the award of the U. S. Anthracite Commission. The majority report is printed in full, as is the agreement of Sept. 2, but the most interesting feature of the article is the series of tables prepared for the review by Charles E. Ash, auditor of the Lehigh & Wilkes-Barre Coal Co. In a table which uses as a base the actual earnings per hour as found by the Bureau of Labor Statistics itself in twenty-two collieries during the half month period ended Jan. 31, 1919, Mr. Ash works both backward and forward, showing the hourly rates back as far as the 1912 agreement, as well as carrying them out to show what they are under the award now in force.

This calculation shows that the inside workers as a group are now receiving wages on an hourly basis 132.8 per cent greater than the hourly rate in force when the European war began. The present compensation for inside workers is 111 per cent greater than in 1916 and 17.1 per cent greater than at the end of 1918.

Outside workers, exclusive of breaker employees, are receiving pay on a basis of 167.5 per cent in excess of pre-war rates, 132.9 per cent above the 1916 basis, and 18.4 per cent above the basis at the end of 1918.

Breaker workers—the majority boys, of course—are getting 170.5 per cent more than they did before the war, 132.9 per cent more than in 1916, and 15.8 per cent more than at the end of 1918.

Lumping all employees, wages are now 138.6 per cent above pre-war wages, 114.5 per cent above 1916, and 17.4 per cent above the end of 1918.

The average hourly earnings of inside workers are now 78.7c., of outside workers 55.9c., and of breaker employees 40.3c. The average for all workers, inside and outside, is 72.3c.

Inside and outside daymen, who got from $1.50 to $3 per 9-hour day in 1914, today get from $4.20 to $5.96 for eight hours.

Boys, who got from 90c. to $1.40 per day of nine hours in 1914, now get from $2.45 to $2.96 for eight hours.

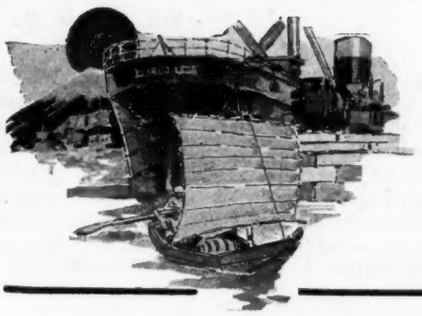
The contract miner, whose hourly earnings averaged 42.5c. under the agreement which expired March 31, 1916, averages 99.2c. under the new contract, or $7.936 for eight hours. On this basis the contract miner averages a higher hourly rate than do blacksmiths in manufacturing shops in fifteen out of seventeen cities covered by U. S. wage reports, blacksmiths' wages in these fifteen cities running from 75c. to 90c.

The contract miner averages a higher hourly rate than do boiler makers in twenty-six out of thirty cities covered by the Federal reports. Boiler makers in Philadelphia manufacturing and jobbing shops get from 80c. to 90c.

In twenty-five out of thirty-two cities electrotype finishers get less than does the contract miner, and the same holds true in the case of electrotype molders.

Out of thirty-four cities there are but three in which molders get as much or more than does the contract miner. In Pittsburgh, home of the iron industry, the iron molder gets 93.8c. an hour.

Wage reports from which the above material is obtained can be found on pages 699-716, *Monthly Labor Review*, October issue.



Foreign Markets and Export News

Germany's Coal Program Calls for Increased Production

Germany's coal production reached its highest point in 1913, when 187,000,000 tons of pit coal were produced, and dropped during the first months of the war until 1915, when again it increased to its highest point in 1917, in which year the production was 167,000,000 tons. Following the end of the war production decreased and in 1919 was only 98,000,000 tons. Before the war German production left a considerable surplus for export, which in 1913 was 45,000,000 tons. The import of foreign coal was in the same year 11,000,000 tons, mainly anthracite from England. The import of foreign coal ceased almost completely during the war. It recommenced, however, in the last few months, when several contracts for American coal have been closed.

Since 1919 the production of pit coal has increased as is shown in the following schedule:

	Production of				
	Pit Coal	Lignite Coal	Coke	Briquets of Pit Coal	Briquets of Lignite Coal
	(In 1,000 gross tons)				
January-June, 1920	61,890	52,204	11,634	2,230	11,261
January-June, 1919	49,033	43,543	9,542	1,804	9,024
January-June, 1918	77,689	51,094	16,674	2,743	11,948
January-June, 1917	73,509	45,222	15,832	2,480	10,246
January-June, 1913	84,671	41,900	15,065	2,879	10,304

During the first six months of 1920 the total production of coal (pit and lignite) is approximately the same as in 1918 and 1917. The production of Alsace-Lorraine and the Saar district is of course not included in the figure of 1920, but has for the sake of comparison been deducted from the figures of the preceding years. The production of the latter two districts was 9,000,000 tons in 1913 and 6,500,000 tons in 1918.

The following shows how the various coal districts of Germany are contributing to the total production:

In June, 1920, Produced:	Pit Coal	Lignite Coal	Coke	Briquets of Pit Coal	Briquets of Lignite Coal
		(In 1,000 gross tons)			
Prussia	10,654	7,838	2,049	362	1,751
Saxony	334	701	12	...	274
Bavaria	6	163	....	...	19
Thuringia	.....	500	....	...	....
Brunswick	.....	255	....	...	....

By the peace treaty Germany is compelled to supply part of her production to Poland, Austria, France, Belgium, and Italy. The supply of the three last named countries has lately been regulated by the Spa agreement and is now stipulated at 2,000,000 tons per month or 24,000,000 tons per year. The supply to Poland and Austria is not regulated. It averaged in the first half year about 4 per cent of the total production, or roughly 2,500,000 tons. The compulsory export of Germany is therefore approximately 30,000,000 tons a year, leaving the country for free disposal about 92,000,000 tons of pit coal and 104,000,000 tons of lignite. The corresponding figures for 1913 after deducting export were 150,000,000 tons of pit coal and 82,000,000 tons of lignite. There is, therefore, a shortage of 58,000,000 tons of pit coal, which is only partly relieved by the higher production of lignite, of 22,000,000 tons.

However, Germany cannot afford to stop export of coal to neutral countries. This must be maintained in exchange for raw materials and foodstuffs. The amount of this export is not published but it is estimated from 8 to 10 millions of tons a year. The situation may, therefore, be summarized that the inland supply of pit coal has been reduced to less than half of the pre-war supply while the supply of lignite is now larger than it ever was.

These figures show that the shortage of pit coal is only partly caused by the compulsory deliveries under the peace treaty and to a considerable part by decreased production. It appears that after the Spa agreement has settled the quantity of coal to be supplied to allied countries, strong efforts are directed toward raising of the coal production in the Ruhr district to such an extent that slight improvements have been effected already during the last months.

DURING THE MONTH of August France produced 1,954,000 tons of coal. During the same month the production of the Saar mines under French control was 686,000 tons. The imports into France from England in August amounted to 800,000 tons. It may be noted that the total exports of coal from England amounted to only 1,847,000 tons during August.

Freight Rates Continue to Decline

The freight market, according to W. W. Battie & Co.'s coal trade freight report, has declined still further and rates are weak, particularly to Antwerp, Rotterdam, French Atlantic and East Coast South American ports. A few steamers have been chartered each day for export coal since the first of the month and the demand for tonnage still continues.

Freight rates by steamer follow:

	Nov. 1.	Nov. 8	Tons Discharged Daily
Malmo	$13.00/13.50	$13.00/13.50	1,000
Copenhagen	13.00/13.50	13.00/13.50	1,000
Stockholm	about 13.50	13.00/13.50	800
Gothenburg	13.00/13.50	13.00/13.50	1,000
Antwerp/Rotterdam	9.50/ 9.75	9.50/ 9.75	1,000
Hamburg	10.50/11.00	10.50/11.00	1,000
French Atlantic ex. Rouen	10.50/11.00	10.00/10.50	700
Algiers	12.00/12.50	12.00/12.50	700
West Italy	12.00/12.50	12.00/12.50	800
Marseilles	12.00/12.50	12.00/12.50	1,000
Piraeus	about 13.50	about 13.50	1,000
Triest/Venice	14.50/15.00	14.50/15.00	1,000
Port Said	13.00/14.00	13.00/14.00	1,000
Constantinople	about 15.00	about 15.00	500
Gibraltar	11.50/12.00	11.50/12.00	1,000
Pernambuco	about 13.75	about 13.00	500
Bahia	about 13.75	about 13.00	500
Rio	about 12.50	11.50/12.00	1,000
Santos	about 13.00	12.00/12.50	600
Buenos Aires or Montevideo or La Plata	12.00/12.50	11.50/12.00	750
Para	about 13.50	about 12.50	500
Rosario	about 13.00	about 12.50	750
To Nitrate Range	8.75/ 9.25	8.75/ 9.25	750
Havana	about 6.00	about 6.00	500
Sagua or Cardenas	about 7.50	about 7.50	300
Cienfuegos	about 7.00	about 7.00	500
Caibarien	about 7.50	about 7.50	300
Guantanamo	about 7.00	about 7.00	500
Manzanillo	about 7.50	about 7.50	300
Bermuda	about 7.00	about 7.00	300
	P. c. and dis. free	—	
Kingston	about 8.50	about 8.50	400
Barbados	8.00/ 8.50	8.00/ 8.50	500
St. Lucia	8.00/ 8.50	8.00/ 8.50	500
Santiago	about 7.00	about 7.00	500
Port of Spain, Trinidad	8.00/ 8.50	8.00/ 8.50	500
Curacao	about 8.00	about 8.00	500
Free p. c. Curacao		Curacao	
St. Thomas	about 7.50	about 7.50	500

All above rates gross form charter.

Secretary of Commerce Suggests Limitations In Export Trade

In a statement in *Commerce Reports*, published by his department, Secretary of Commerce Joshua W. Alexander says the United States should limit its efforts to building up an export coal trade to countries that are natural mar-

kets when a sufficient supply has been produced to supply domestic demands. He denies that he lacks sympathy with development of the coal industry, but says the primary interest of the producer is furnishing coal to domestic consumers at as low a rate as possible.

Curfew Law to Conserve Fuel in Germany

A curfew will ring at 10 o'clock throughout Prussia this winter except in Berlin and a few other principal cities, where public gathering places will be permitted to remain open one hour later, according to the *Public Ledger*. This order comes from the Minister of the Interior and probably will apply to all Germany, being made necessary by the coal storage, which has already forced a suspension of deliveries to electric power plants in the Rhineland and Westphalia and has closed down many blast furnaces.

Output in Northern France Increases

Six pits in the Ostricourt Collieries are in operation and the sinking of No. 7 pit, undertaken before the war, will soon be resumed. The daily output is over 2,400 tons, and it is expected that the mines will recover their full productive capacity in 1921 (800,000 tons a year).

The output of Nord and Pas de Calais coal fields reached nearly 1,000,000 tons during September, 1920. Of this total 745,000 tons were yielded by Pas de Calais collieries (Bruay, Marles, Nœux, Béthune, etc.). The Mines de Bruay produced 213,000 tons, Marles and Nœux, 163,000 tons each, Béthune, 147,000 tons. Other collieries contributed 50,000 tons (Ferfay, 22,000; Vendin-les-Béthune, 14,000; Ligny, 13,000; la Clarence, 9,000). The Nord collieries (Anzin, Aniche, Ostricourt, etc.) produced 218,000 tons. The Mines d'Anzin produced 75,000 tons, Aniche 62,000 tons, Ostricourt 52,000 tons. Some 6,000 tons were produced in the Dourges fields, 6,000 tons from Douchy, and 4,500 from the Escarpelle.

German Production Per Man for 1919 Not Equal to 1918 Figures

Coal mined per man by German labor during 1919 decreased as compared with the 1918 figures. The following averages were obtained, the corresponding figures for 1918 being given in parentheses: Dortmund district—184 tons (244 tons), or 0.618 tons (0.754 tons) per shift; Upper Silesia, 176 tons (259 tons), or 0.602 tons (0.830 tons) per shift; Lower Silesia, 130 tons (163 tons), or 0.421 tons (0.514 tons) per shift; Saar 158 tons (194 tons), or 0.529 tons (0.616 tons) per shift; Aachen, 158 tons (189 tons), or 0.514 tons (0.581 tons) per shift; Lower Rhine (left bank), 207 tons (259 tons), or 0.699 tons (0.811 tons) per shift. These figures contrast very strongly with those for brown coal, which were, in the Left Rhine district, 1,253 tons (1.664 tons), or 4.083 tons (5.400 tons) per shift, and in the Halle district, 666 tons (875 tons), or 2.215 tons per shift.

Exports of Coal, Coke and Manufactured Fuel From the United Kingdom During September, 1913, 1919 and 1920*

To		September, 1920 — Coal—Small Tons	£	Coal—Through-and-through (Unscreened) Tons	£	Coal—Large Tons	£	September — All Coal Quantity (tons) 1913	1919	1920	All Coal Value (£) 1913	1919	1920
Russia		10,039	42,052	530	3,180	1,529	11,466	668,472	24,454	12,098	487,402	75,690	56,698
Sweden		23,717	117,258	19,351	121,374	15,775	83,954	394,314	122,354	58,843	262,418	451,373	322,586
Norway		9,787	50,169	17,416	107,346	12,014	71,958	174,861	94,077	39,217	112,249	336,079	229,473
Denmark		30,070	136,530	21,432	122,204	14,908	90,009	275,724	90,911	66,410	180,232	336,306	348,743
Germany		1,916	11,492	.....	.....	.....	.....	833,326	.....	1,916	503,660	.....	11,492
Netherlands		13,294	53,499	2,573	14,841	661	3,185	154,904	24,720	16,528	95,858	80,696	71,525
Belgium		9,703	31,684	6,528	35,823	2,923	14,070	164,448	3,000	19,154	96,966	5,958	81,577
France		229,645	739,235	225,017	939,335	78,257	356,079	1,040,489	1,280,655	532,919	658,144	3,454,082	2,034,649
Portugal		1,148	5,670	13,988	73,235	382	2,196	94,086	75,604	15,518	69,510	238,072	81,101
Azores and Madeira		3,527	15,813	1,185	5,712	15,196	83,632	6,754	26,414	19,908	5,624	72,771	105,157
Spain		1,086	3,362	4,634	22,024	118	557	196,781	35,839	5,838	139,740	128,844	25,943
Canary Islands		8,635	40,326	5,642	30,763	24,812	132,129	73,897	25,485	39,089	56,173	86,794	203,218
Italy		60,586	229,176	59,436	302,841	44,434	193,527	810,994	329,471	164,456	572,570	892,690	725,544
Austria-Hungary		.....	.....	2,665	8,543	.....	.....	53,761	43,701	2,665	36,072	140,198	8,543
Greece		1,487	10,333	10,076	57,951	3,903	22,368	76,091	9,542	15,466	62,278	33,554	90,652
Algeria		17,103	66,210	10,471	50,561	45,562	222,231	66,505	22,426	73,136	45,147	67,176	339,002
French West Africa		41	263	149	801	2,070	7,776	10,776	19,489	2,260	8,283	59,840	8,840
Portuguese West Africa		5,486	25,867	1,793	9,661	24,897	140,250	18,624	14,445	32,176	16,014	52,668	175,778
Chile		90	488	.....	.....	.....	.....	27,204	553	90	22,761	2,404	488
Brazil		.....	.....	.....	.....	.....	.....	158,896	6,276	.....	139,977	21,883	.....
Uruguay		3,719	11,658	.....	.....	4,438	16,641	65,642	26,172	8,157	57,438	81,487	28,299
Argentine Republic		5,528	33,167	.....	.....	.....	.....	267,142	62,094	5,528	223,967	175,081	33,167
Channel Islands		615	1,576	4,114	7,205	8,551	16,375	14,509	12,462	13,280	10,394	21,456	25,156
Gibraltar		20,407	93,435	27,081	151,371	83,047	445,460	14,940	102,115	130,535	11,870	317,679	690,266
Malta		5,691	26,002	797	4,345	24,892	114,205	36,249	21,644	31,380	24,913	50,989	144,552
Egypt		13,335	60,332	11,891	61,213	93,726	443,666	258,232	138,759	118,952	191,421	369,738	565,211
Anglo-Egyptian Sudan		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aden and Dependencies		.....	.....	.....	.....	.....	.....	22,930	.....	.....	19,811	.....	.....
British India		235	1,057	.....	.....	.....	.....	8,827	.....	235	7,026	.....	1,057
Ceylon		.....	.....	.....	.....	5,151	19,316	25,601	.....	5,151	21,586	.....	19,316
Other countries		9,109	36,428	12,692	64,397	22,917	93,657	182,201	64,527	44,718	142,663	179,411	194,482
Total	Anthracite	69,650	184,310	391	1,420	68,271	305,345	254,811	165,969	138,312	205,903	367,101	491,075
	Steam	396,333	1,595,333	345,441	1,706,098	454,999	2,254,746	4,467,111	2,090,509	1,196,773	3,135,956	6,179,614	5,556,177
	Gas	200	1,001	98,487	423,764	238	1,429	996,158	271,158	98,925	633,730	747,945	426,194
	Household	.....	.....	.....	.....	6,559	22,875	175,022	11,930	6,559	115,392	39,795	22,875
	Other sorts	19,816	62,438	15,142	63,444	96	312	304,078	137,623	35,054	191,186	398,464	126,194
Total		485,999	1,843,082	459,461	2,194,726	530,163	2,584,707	6,197,180	2,677,189	1,475,623	4,282,167	7,732,919	6,622,515
Total (Sept., 1919)		*649,687*	*1,566,347*	*859,613*	*2,466,991*	*1,167,889*	*3,699,581*	.....	.....	.....	.....	.....	.....
Total (Sept., 1913)		*1,524,181*	*842,926*	*1,216,584*	*764,588*	*3,456,415*	*2,674,653*	.....	.....	.....	.....	.....	.....
Coke—Gas		.....	.....	.....	.....	.....	.....	125,357	150,096	74,133	113,660	546,410	609,800
Other sorts										44,843			314,983
Manufactured fuel		.....	.....	.....	.....	.....	.....	179,041	135,268	246,830	158,600	367,313	1,311,247
		Nine Months Ended September, 1920						Nine Months Ended September					
Total	Anthracite	677,138	1,696,993	1,456	6,322	571,630	2,156,349	2,189,491	1,147,514	1,250,224	1,743,332	2,391,814	3,859,664
	Steam	5,146,206	17,589,018	4,197,361	17,559,991	6,871,969	30,402,057	39,755,473	21,912,477	16,215,536	28,105,660	16,190,846	65,551,066
	Gas	1,668	7,200	1,574,690	6,271,272	10,764	37,386	8,583,712	2,494,702	1,587,122	5,259,521	5,407,616	6,315,858
	Household	14	60	1,016	5,460	51,010	135,796	1,335,833	97,688	52,040	873,933	212,971	141,316
	Other sorts	436,441	1,428,826	309,561	1,193,586	631	2,160	2,653,279	1,186,231	746,633	1,649,710	2,515,569	2,624,572
Total		6,261,467	20,722,097	6,084,084	25,036,631	7,506,004	32,733,748	54,517,788	26,838,612	19,851,555	37,632,156	56,718,816	78,492,476
Total for nine months of 1919		*5,893,119*	*10,657,440*	*7,567,449*	*15,879,784*	*13,378,044*	*30,181,592*	.....	.....	.....	.....	.....	.....
Total for nine months of 1913		*13,018,098*	*7,389,519*	*11,004,035*	*6,728,028*	*30,495,635*	*23,513,709*	.....	.....	.....	.....	.....	.....
Coke—Gas		.....	.....	.....	.....	.....	.....	838,055	1,012,564	652,226	800,023	2,964,267	3,859,934
Other sorts										806,129			4,453,210
Manufactured fuel		.....	.....	.....	.....	.....	.....	1,542,365	1,253,844	1,746,734	1,323,714	2,682,201	8,071,691

* From the *Colliery Guardian*.

Utilities See in Assigned Cars the Only Solution of Their Fuel Difficulties

Utility Officials Blame Machinations of Operators for Issuance of Service Order No. 21—George W. Elliott Asserts That Plants Have Been Unable to Obtain Coal Since Suspension of Order No. 16—Tabulation Shows Fuel Situation

By Paul Wooton
Washington Correspondent

THAT the average public-utility official firmly believes that he has been deprived of assigned cars through the machinations of the coal operators became clear as an outgrowth of the discussion of car distribution and other matters affecting public utilities, at the annual convention in Washington last week of the National Association of Railway and Utility Commissioners. In the discussion of the various questions pertaining to coal it was quite evident that the state public utilities commissioners sympathize entirely with the position of the Committee on Gas and Electric Service that assigned cars offer the only solution to the existing fuel difficulties.

In a letter to Walter A. Shaw, president of the National Association of Railway and Public Utilities Commissions, George W. Elliott, secretary of the National Committee on Gas and Electric Service, called attention to "the calamity that is impending" and presented a table showing the ratio of shipments to the needs of the utilities. Mr. Elliott's letters reads as follows:

The National Committee on Gas and Electric Service feels it incumbent to call the attention of your honorable body, while it is in session, to the gravity of the coal situation as affecting the operations of public utilities generally throughout the United States.

The Interstate Commerce Commission, realizing the hazardous condition which the public utilities were in and acting with the authority conferred on them by the new transportation law, made effective July 19, 1920, a service order which authorized the placing of assigned cars at the coal mines for public utility loading sufficient to take care of the daily requirements, but not for storage, and by this action protected the public in ensuring the utilities regular shipments to provide for daily service to the public. These priority orders were continued until Oct. 14, when they were superseded by the present Service Order No. 21, which order was intended to be invoked only where emergency was shown to exist and that every effort was to be made to get the coal they had previously bought and contracted for without recourse to Order No. 21.

Shipments Recede to 47 Per Cent of Needs

Since that date more than three weeks have elapsed and all efforts to obtain their coal have proved futile and the result of such failure is depicted in the accompanying tabulation showing that after the suspension of Order No. 16 on Oct. 14 and without the assistance of Order No. 21, the shipments from Oct. 15 to 23 showed a falling off to 47 per cent of the current daily consumption of a representative group of utilities; a further survey made for the week ending Oct. 30 showed the shipments to be only 53 per cent of daily needs, thus further depleting the meager reserve stocks of the utilities and the dark outlook of facing winter conditions with the prospects of possible curtailment or suspension of service to the public.

With these conditions confronting the public utilities we feel it our duty to take the opportunity of bringing it to your attention in order that you may be made fully aware of the calamity that is impending unless some action is taken to provide carrying capacity at the mines to insure daily operation of public utilities in the discharge of their obligations to the public. . . .

Our committee is composed of members appointed by the American Gas Association and the National Electric Light Association, which two associations represent approximately 85 per cent of all the utilities furnishing these classes of service, and all its expenses are borne by these associations, although the services of our committee are not confined to the above membership but are rendered to non-members as well, and all municipal and other plants furnishing similar public service. We are also acting for the American Electric Railway Association or any non-members in that industry.

The table referred to in Mr. Elliott's letter follows:

COAL SITUATION AT REPRESENTATIVE PUBLIC-UTILITY PLANTS
(In Carloads of Fifty Net Tons)

Name of Company	Address	Average Daily Needs	Average Daily Shipments Wk. Oct. 23	Average Daily Shipments Wk. Oct. 30	Col. 2 — Ratio of Shipments to Avg. Daily Needs Week of Oct. 30	
Consumers Gas Co.	Toronto, Can.	18.7	4.0	6.3	21	33
Hartford City Gas Light Co.	Hartford, Conn.	3.5	0.0	2.0	0	67
Hartford Elec. Light Co.	Hartford, Conn.	8.2	4.0	3.8	46	46
Potomac Power Co.	Washington, D. C.	15.2	7.1	8.1	47	53
Valdosta Lighting Co.	Valdosta, Ga.	0.7	0.5	0.5	43	71
DeKalb-Sycamore Elec. Co.	Dekalb, Ill.	1.5	1.1	1.0	75	67
Granite City Gas Lt. & Fuel Co.	Granite City, Ill.	0.5	0.1	0.5	20	100
Central States Gas Co.	Vincennes, Ind.	0.7	0.0	0.0	0	0
Citizens Gas Co. of Ind.	Indianapolis, Ind.	45.7	30.3	0.0	66	0
Ft. Wayne & Northwestern Ry.	Kendallsville, Ind.	0.6	0.1	2.2	17	367
Indianapolis St. Ry. Co.	Indianapolis, Ind.	4.4	0.0	0.0	0	0
Kentucky Utilities Co.	New Albany, Ind.	1.4	1.0	0.0	70	0
United Gas & Elec. Co.	New Albany, Ind.	0.7	0.4	0.5	57	71
Cambridge Gas Lt. Co.	Cambridge, Mass.	6.3	2.9	1.6	44	28
Taunton Gas Lt. Co.	Taunton, Mass.	1.8	1.0	0.8	56	44
Worcester Elec. Lt. Co.	Worcester, Mass.	9.4	3.8	5.1	46	34
Battle Creek Gas Co.	Battle Creek, Mich.	4.0	0.8	1.5	20	37
Consumers Power Co.	Jackson, Mich.	24.9	11.8	12.8	48	51
Detroit City Gas Co.	Detroit, Mich.	1.7	9.0	6.3	48	34
Detroit Edison Co.	Detroit, Mich.	93.6	24.4	0.0	26	0
Grand Rapids Gas Lt. Co.	Grand Rapids, Mich.	6.8	1.4	2.0	20	32
Iona Gas Lt. & Coke Co.	Iona, Mich.	0.3	0.3	0.2	100	67
Michigan Light Co.	Flint, Mich.	12.2	11.0	0.8	90	6
Wastenaw Gas Co.	Ann Arbor, Mich.	2.1	1.1	1.3	52	62
Southern Ill. Lt. & Pr. Co.	St. Louis, Mo.	0.2	0.9	0.0	450	0
Union Elec. Lt. & Pr. Co.	St. Louis, Mo.	28.1	21.3	0.0	76	0
Public Service Elec. Co.	Newark, N. J.	73.6	30.5	41.7	41	57
Public Service Gas Co.	Newark, N. J.	20.9	7.4	12.0	25	41
Adirondack Power & Lt. Co.	Amsterdam, N. Y.	8.2	2.4	1.8	29	22
Brooklyn Edison Co.	Brooklyn, N. Y.	36.4	20.4	20.0	56	55
Buffalo Gen. Elec. Co.	Buffalo, N. Y.	12.9	1.6	2.8	13	22
Consolidated Gas Co. of N. Y.	New York, N. Y.	59.0	18.6	30.0	32	51
New York Edison Co.	New York, N. Y.	117.0	65.0	70.0	56	60
Rochester Gas & Elec. Co. Rochester, N. Y.,	Gas	9.9	7.5	8.0	76	81
	Elec	8.2	9.3	0.0	113	0
So. N. Y. Power Co.	Cooperstown, N.Y.	0.2	0.0	0.0	0	0
Erie City Water Works.	Erie, Pa.	1.3	0.6	0.0	38	0
Phila. Rapid Transit Co.	Phila, Pa.	9.5	5.8	6.0	61	63
Cinn. Traction Co.	Cincinnati, Ohio.	9.4	4.6	5.7	49	61
Cleveland Illuminat'g Co.	Cleveland, Ohio.	45.0	27.0	23.0	60	65
Cleveland, S. W. & Cols. Ry.	Cleveland, Ohio.	4.1	3.3	3.2	80	79
Ohio Elec. Rys. Co.	Springfield, Ohio.	2.6	3.5	0.0	13	0
Ohio Service Co.	Coshocton, Ohio.	3.0	1.4	1.3	46	43
Ohio St. Power Co.	Fremont, Ohio.	7.0	1.1	3.3	17	47
Penn. Ohio Elec. Co.	Youngstown, Ohio	11.7	6.6	5.3	48	45
Toledo Rys. & Lt. Co.	Toledo, Ohio.	24.0	14.7	0.0	61	0
United Gas Impr. Co.	Phila., Pa.	12.6	2.0	0.0	22	0
Phila. Elec. Co.	Phila, Pa.	69.0	0.0	68.0	0	69
Citizens Gas Lt. Co.	Jackson, Tenn.	0.4	0.0	0.5	0	125
Memphis, Gas Co.	Memphis, Tenn.	6.6	1.8	2.3	27	35
Richmond Dept. Pub. Svc.	Richmond, Va.	2.6	2.0	1.8	77	69
Milwaukee Elec. Ry. & Lt.	Milwaukee, Wis.	37.4	29.0	0.0	77	0
Milwaukee Gas Lt. Co.	Milwaukee, Wis.	13.6	3.1	3.5	23	26

		Daily requirements	Daily shipments	Daily shipments	Ratio of shipments to average daily needs	
Total—week 23		855.5	406.9	....	47	..
Total—week 30		668.5	....	357.5	...	53
Total of utilities reporting in week of Oct. 23, which also reported in week of Oct. 30	Week of 23	599.5	262.9	....	44	..
	Week of 30	599.3	....	309.5	...	51

The communication from Mr. Elliott led the Association of Railway and Utilities Commissioners to invite him to address one of its sessions. Mr. Elliott took issue with the statement which had been made by Commissioner Aitchison of the Interstate Commerce Commission that the utilities want the commission to enforce the carrying out of contracts. He denied that there ever had been any such intention. All that is asked is the invocation of Service Order No. 21, which was duly authorized by the commission.

Mr. Elliott told the audience at the convention that the co-operative committee, of which he is a member and on which the operators and the railroads each has representation, is not meeting the utilities situation and that the Interstate Commerce Commission declines to allow the use of assigned cars to meet the emergencies which are not relieved by the operators and the railroads when called upon to provide emergency coal. In that connection Mr. Elliott states that he has no fault to find with the National Coal Association, but says "it is quite evident that the National Coal Association cannot control its own members. Operators frequently make no shipments even when advised that an emergency exists."

Operators and Roads Ignore Calls for Help

Mr. Elliott was careful to state that John Callahan, representative of the operators on the committee, had worked tirelessly and conscientiously, but that individual operators are coming more and more to pay little attention to Mr. Callahan's telegrams urging them to ship on the contracts of utilities which are at the end of their fuel supplies.

In the same way Mr. Elliott finds that A. G. Gutheim, who represents the railroads on the committee, puts forth his best efforts to get cars for the operator called upon to ship to a utility in trouble. The difficulty again is that the individual road ignores Mr. Gutheim's request.

A perusal of the letters being received at the rate of several hundred daily by Mr. Elliott shows very clearly that the average utility official is of the opinion that the coal operators presented their side of the case so well that the Interstate Commerce Commission was influenced to cancel Service Orders Nos. 9 and 16 and authorize an order advantageous to the operators at the expense of the utilities.

Mr. Elliott made it clear in his remarks before the convention that the repeal of Service Order No. 16 was inevitable because the Interstate Commerce Commission could not allow an order to stand that was being used for speculative purposes. He admitted that many abuses arose under Service Order No. 16 and that with assigned cars in their control, many utilities used them as a weapon to beat down prices. Under the present order, however, he points out that the National Committee on Gas and Electric Service is in a position to ascertain when a real emergency exists.

Expects Utilities To Be in Straits All Winter

While both the operators and the railroads expect the situation to improve within a week to the extent that plenty of coal will be available for everyone, Mr. Elliott and his associates do not share that expectation. As few utilities have a reserve worthy of the name, Mr. Elliott predicts that the fight to keep the public utilities in operation will last all winter. With winter transportation difficulties at hand, Mr. Elliott expects to see an increase in the obstacles to the accumulation of normal reserves on the part of public utilities, unless assigned cars are allowed.

On the other hand, the operators declare that the co-operative committee has functioned and has furnished coal in hundreds of emergencies. One proof that it has functioned is that no utility has closed. It is contended vigorously by the National Coal Association that the public utilities are exaggerating their situation. It is not believed that there is anything at all in the present situation to justify the use of assigned cars at a time when the saturation point has been reached. It is pointed out that one of the large railroads, which does not have a mine on its line, finds it no longer necessary to request assigned cars to obtain its coal.

Another evidence that supply has caught up with the demand is the fact that middlemen are in grave difficulties, due to the large number of cars of coal which have been refused and which they cannot handle under the present limitation of reconsignment. In addition, attention is called to the fact that Lake insurance expires Nov. 23, which brings navigation to a close on that date, thereby releasing an additional 2,000 cars daily for other deliveries. December is certain to be a light month in the consumption of steam coal, as a large percentage of plants have made plans to make repairs and take stock during that month.

Operators also called attention to the fact that any preferential deliveries on public-utility contracts is likely to involve them in legal difficulties, for any other holder of a contract would have a good basis on which to claim damages.

In this connection it may be said that the utilities intend to continue a determined fight to be placed on the same basis as railroads in the matter of assigned cars. Mr. Elliott uses this example: The Pennsylvania R.R. transports passengers between Washington and Baltimore. In order to safeguard the continuity of the service, it is allowed assigned cars for its coal. The Washington, Baltimore & Annapolis electric line also hauls passengers between Washington and Baltimore, but because it happens to transform its coal into electricity there is no such safeguarding its continuity of operation.

Why Service Order No. 16 Was Suspended

CHAIRMAN CLARK of the Interstate Commerce Commission, speaking before the National Association of Railway and Utilities Commissioners in Washington, Thursday, Nov. 11, 1920, answered the critics of the commission who have complained that by canceling Service Order No. 16, which provided unlimited assigned cars for public utilities, public utilities in general have been in a precarious position as regards their supply of coal.

In answer to E. I. Lewis of Indiana, who said that Indiana, Illinois, Wisconsin and Ohio are finding that the operation of the present order (S. O. No. 21) is not safeguarding the vital interests which are served by the public utilities, Mr. Clark said:

"In the first place I want to say that in view of the circumstances that obtained throughout the country, which are well known to all of you, at the time the Transportation Act became a law and that have persitsted since that time and been greatly aggravated by labor troubles that could not have been foreseen, I do not feel that any action taken by the Interstate Commerce Commission under its car service powers needs any defense where the facts under which the order was made are understood; and I do not think we need to apologize for anything that we have failed to do, and I do not want to be understood as doing either of those two things. Without going into what might be interesting but would be too long a recital of the conditions affecting the fuel situation, and coming concretely to the point that you referred to, I want to point out that one of the things which we bore in mind and carefully protected by the assigned-car rule permitted public utilities the same advantage that the railroad has under the assigned-car rule for railroad fuel, to see to it that public utilities could get coal for their current needs, but not to increase their storage.

"That was the specific provision of our order. And under that provision they were able to get coal for their current needs, and many of them did a good deal more. Some of them did largely increase their storage supply, and others connived with outsiders and dishonestly, and wholly improperly, shipped coal under those terms, and under these assigned car privileges coal that never was used for the public utility at all was diverted to other uses, and that is why we suspended that order. And since we suspended that order we have said to every public utility, or every representative of a public utility who has approached us on the subject, 'You bring to us a showing of a mine operator from whom you have contracted your coal, and show us the railroad over which you want to ship it, and

give us an opportunity to give a specific permit or order that will take care of your situation, and we will give it full consideration'; and not one of them has come forward with his operator prepared to say 'We want this coal and this operator will furnish it if you will provide the cars.'"

Evils of Assigned-Car Practice Explained By Commerce Commissioner Aitchison

HAD the coal operators who have been opposing the theory of the assigned-car practice been present at the meeting of the National Association of Railway Commissioners in Washington, on Thursday, Nov. 11, they would have heard from Commissioner Aitchison of the Interstate Commerce Commission a résumé of the arguments opposed to assigned cars for public utilities strangely similar to those advanced by the operators against assigned cars for railroad fuel.

Under the pressure exerted by the public utility companies, urging either a return to assigned cars ad lib., as under Service Order No. 16, or a loosening up under S. O. 21, Commissioner Aitchison reviewed the coal situation of last spring and said that when the public utilities came to the commission with their troubles, provision was made for their protection and "for a period of sixty days any utility in the United States which chose to do so was permitted to draw a sight-draft on any railroad in the United States in favor of any man that it designated for all the cars it could use, and those cars had to be taken from the neighboring mines on that same line and given to the utilities." The coal thus provided was for current use and not for storage or reassignment, and under the orders the utilities were getting all the cars that they needed to carry coal for their daily use, and, in addition, for adding to their storage piles.

Mr. Aitchison blamed the utilities for not observing the spirit of the orders. "They had sixty days' time within which they had this boon," he said. "And was that privilege observed by them in the spirit in which it was given? No! The result was that in three districts of the United States alone the total assigned cars that these public utilities asked for their daily requirements exceeded the average daily consumption winter and summer of all the utilities of the United States—three districts on three railroads.

"Of course that was a condition which was intolerable. When we assign a car we diminish the available car supply for the other mines. We make it possible for this mine to run 100 per cent time, and thereby another mine which normally would operate 75 per cent time is able to operate only 50 per cent time. The effect of that sort of thing on mine labor can be imagined. It is bad enough in the case of railroad assigned cars; but when you come to multiply it, it makes it infinitely worse. The laborers go from the mine with the 50 per cent car supply, where they are employed 50 per cent of the time, to the place where they can get steady employment. The result is threefold. It cuts down the total production; it increases the unsettled condition of labor, and by diminishing the amount of coal on the spot market it increases the price of spot coal.

"Now for those sixty days we gave them the opportunity to build up their coal supplies, and when there is a real emergency we are ready now to see the coal move to meet the necessities of public utilities; but we are unwilling to bribe a mine operator who has a contract with a public utility but who prefers to sell his coal elsewhere—because the public utility contract was made last spring or winter, when the price was low—we are unwilling to bribe him by giving him extra cars, by giving him an advantage over his honest mine neighbor.

"Now that is the situation. We have laid this invitation before a number of these utilities, and not one of them has accepted it, although one gentleman said it was just what he wanted, and he was going to stay over for the purpose. Bring your mine operator here, have the railroad man come here who distributes these cars, and we will see that that mine gets its fair share in proportion to the coal produced upon that line of railroad, and that that mine gets what its neighbors do. Then let that mine operator tell what he has done with the coal he has produced, what he is doing with it, and what he will do with it, and we will consider whether it is necessary to give him a super-allotment of cars and take cars from the neighboring mine and give them to him over and above what he is normally entitled to, creating a discrimination in his favor.

"The simple fact is that it resolves itself down as 99.44 per cent of these cases have resolved themselves down—it is a question of price and that is all there is in it, because the coal has been produced and is being produced. Why even last week—the week ended Nov. 6—with All Saints' Day, a holiday for every Catholic miner, and with election day in that week, the production, which fell to 7,500,000 tons after the switchmen's strike, exceeded 11,350,000 tons for last week, and that week's production was preceded by four weeks which exceeded 12,000,000 tons a week. We are today equaling the coal production of 1917, the height of the war; maybe a few thousand tons one way or the other, but substantially the same. We have exceeded that production on coal.

The Interstate Commerce Commission on Nov. 15 issued a further amendment to Service Order No. 20, effective at midnight, Tuesday, Nov. 16, which has the effect of releasing the territory west of the Mississippi River from the use of open-top cars preferentially for the loading of coal. It also permits carriers east of the Mississippi River to use all flat-bottom gondola cars for loading of commodities generally as well as coal.

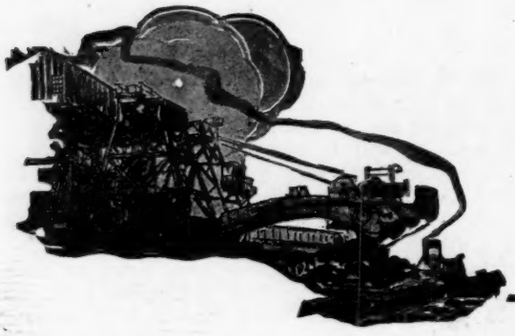
"Now there is a duty that devolves upon the public utility commissions with respect to this public utility coal. Price is not a transportation emergency that is recognized by the Transportation Act. If we are to take care of a public utility because it cannot buy coal except by giving cars preferentially there is no reason why we should not widen our activities and look over the community generally and attempt to pick out the essentials of industry and use them in the same way. We can and will take care of the rare cases, even if we have to load coal onto passenger trains in order to do it. But as price is the thing that is sticking in the minds of these utilities you gentlemen are the ones who have got to protect them there; and if there is any breakdown, it is not with us, because the coal is being produced and moved, and if your utilities cannot get it, that is their lookout and yours."

Exports Exerted Minor Effect on Coal Prices Throughout Country, I. C. C. Finds

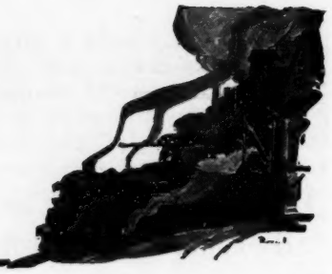
THE Interstate Commerce Commission on Friday, Nov. 12, issued a report covering its investigation into the effect of exportation of coal on prices, conducted under a resolution passed by the Senate June 4 last. The commission says that while foreign demand for American coal was an important factor in causing domestic coal prices along the Atlantic seaboard to be high during the first nine months of 1920 it was only a minor factor in creating high coal prices for the country as a whole.

"It would be an error to assume that fundamentally the high prices paid for spot coal are to be ascribed mainly to the large export," the commission says. "There has been an abnormal domestic situation. The foreign demand intensified the abnormal domestic demand and the several factors together afforded an opportunity for the exacting of prices not justified by the cost of production."

The commission says, however, that in certain situations the foreign demand plays a much more important part than is indicated by a comparison of total export and production.



Production and the Market



Weekly Review

PRODUCTION of soft coal has overtaken demand and prices are still dropping. Without exception the markets for bituminous coal are being filled and demand is decreasing. Business is experiencing a slump the extent of which will be measured in coal production in the next six weeks.

Compared with the slump in prices of other commodities, coal is going down gradually. Last week witnessed the most general and violent fall in wholesale eash prices for commodities of any week in 1920, and probably the greatest general decline of any single week since 1893 or 1894. Of eighteen commodities of general consumption twelve declined last week, five were unchanged, and only the wholesale price of eggs advanced.

Service Orders Likely To Be Suspended Soon

It is not expected that the soft-coal market will touch bottom until after Dec. 1, which also is the latest date at which the outstanding service orders of the Interstate Commerce Commission are expected to be suspended.

Production of bituminous coal last week was in excess of 12,000,000 tons, following 11,355,000 tons, a record for election week. Anthracite production made a sorry showing election week with 1,390,000 net tons, a decrease from the maximum possible of nearly 2,000,000 tons. The loss was due to observance of holidays and absenteeism.

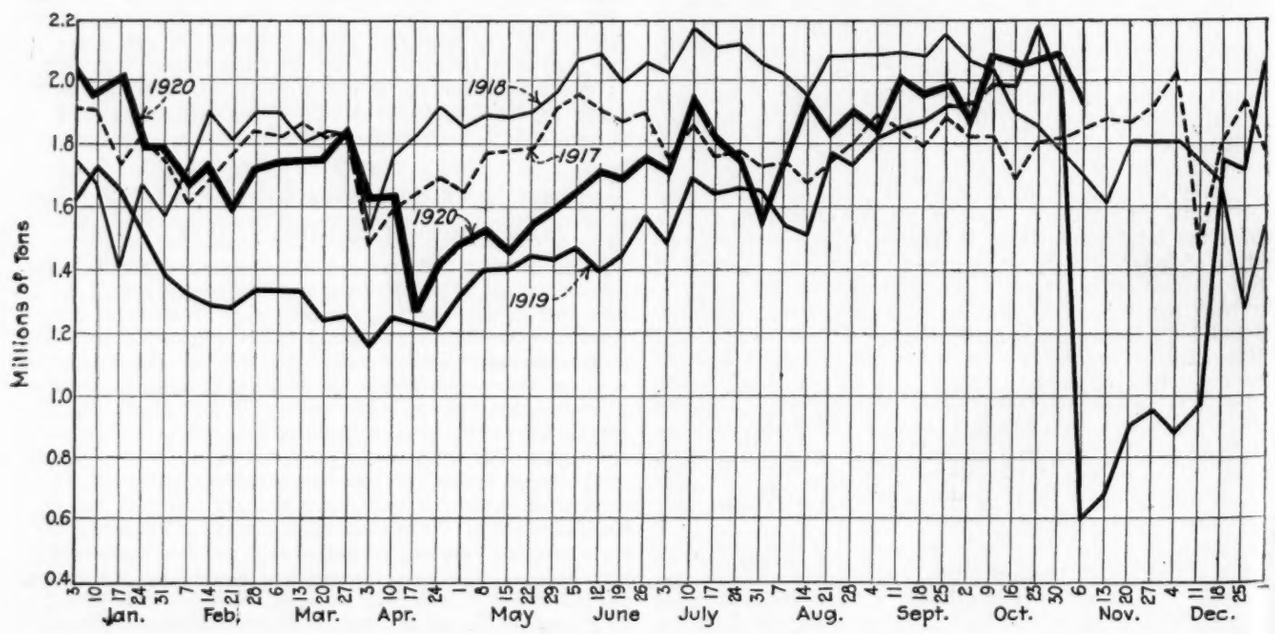
Public utilities stoutly maintain they are extremely short of steam coal, but steam railroads with few exceptions are well stocked up and are well covered by contracts. Coal stocks in the hands of New York City utilities on Nov. 8 were 397,494 tons, a decrease of 18,464 tons compared with the week preceding. Retail dealers who distribute soft coal are absorbing a large tonnage. Under the informal arrangement between Middle West retailers, coal shippers and the railroads, entered into in October, whereby 2,010 cars per day would be supplied on emergency orders, about 19,000 cars, representing 40 per cent of the total promised, had been shipped up to Nov. 3.

It is important to bear in mind that the excess over normal in the present output is being absorbed on contracts and current orders of last month. The far-seeing operators have had salesmen on the road for the last four to six weeks and have been covering with railroad assigned-car contracts until next April. On this business prices have ranged from $4.25 to $5.50 on best steam coal of Fairmont grade.

BITUMINOUS

Production during the first week in November declined 1,963,000, or 9.4 per cent, as compared with the preceding week. According to the Geological Survey, 11,355,000 net tons were mined. As anticipated, the decrease was caused by the occurrence of election day and All Saints' Day within the same week, although the loss was not as heavy as expected. In spite of the decrease, the output was larger than in the corresponding week of any of the last four years. The year 1920 is now less than 7,000,000 tons behind the 1917 figure. Early reports during the week of Nov. 8-13 indicate a heavy production figure for that period.

Average Daily Production of Bituminous Coal*



*From weekly report of Geological Survey.

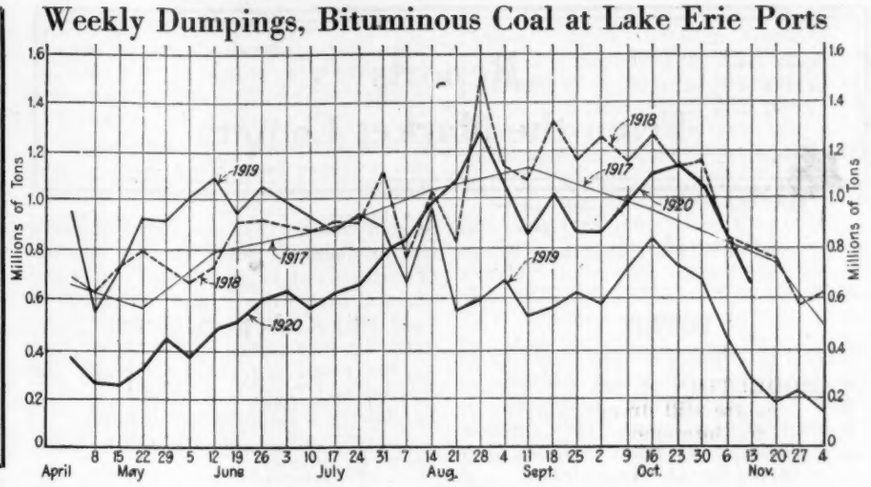
Lake Coal Dumped Season to Nov. 13

(NET TONS)

	1919	1920
Total	22,385,789	21,561,951

Week of Nov. 13, 1920

Cargo	627,157
Fuel	41,793
Total	668,950



Transportation conditions continue to improve, but slowly. Car shortage was not the leading factor in curtailing production during the week, as the reduced working time caused by the holidays made losses from inadequate placements almost negligible. Improvement in the supply of empties was general throughout the northern Appalachian section, while middle Appalachian reports showed a decline in the Kanawha district. Gains were made also in the Alabama fields, where cars are available for all tonnage produced. Kentucky operations still experience the poorest supply, although improvement is noted in the western section of the state. Pittsburgh No. 8 district is hampered by lack of cars and operators have applied to the Interstate Commerce Commission for relief, which has been promised. Illinois placements were decidedly better. West of the Mississippi, Utah and Colorado still report unsatisfactory supply.

Labor is working more smoothly. In some sections the return of men to the mines from other industries is almost causing a surplus, as in the Alabama section. The recent holidays were the cause of considerable idleness, as miners seized the opportunity presented and a general lay-off resulted. Eastern Ohio miners are still in a dissatisfied frame of mind, but production there has made some gains since the settlement of the outlaw strike. The Georges Creek and Upper Potomac section is the scene of disturbance that may call out 8,000 men. Withdrawal of Federal troops from the Thacker strike zone was the signal for a renewal of threats and violence. Striking Colorado lignite miners have largely returned and production is nearing normal.

Prices Continue To Drop, but Less Swiftly

Prices for spot coal continue to drop, although the week ended Nov. 6 was not marked by the swift decline of the preceding week. To the weak demand caused by industrial let-down was added a tendency on the part of buyers to withdraw from the market and await still lower prices in the belief that the bottom of the decline has not yet been reached. Buying for reserve is almost at a standstill and cancellations are common.

Fairmont quotations are lower; Pool 34, $5.50, and Pool 44, $5. Pittsburgh district prices range $4@$4.50 for steam, $5@$5.50 for gas and byproduct; Pittsburgh No. 8 is unchanged. Midwest prices have weakened as manufacturing curtailment continues; Indiana steam lump is now being quoted at $5 for shipment outside the state. Western Kentucky coal is in good demand with prices slightly lower at $5.25@$6. The Boston market has reached a new low-price level: medium Pennsylvania grades, $5; bunker supplies generally a dollar higher. New York reports a further slump with New York Central Line coals at $5, slightly higher than Pennsylvania Line fuel; Pool No. 11, $4.50@$5; Pool 10, $5.25@$5.75, and Pool 34 down to $5 @$5.50. Late Philadelphia reports show a range of $5 to $7 for medium and best grades; Pool 18 slow at $4@$4.50. Corresponding slumps are reported in all the market centers with increasing production narrowing the breach between supply and demand.

According to the Geological Survey, coal handled over the Tidewater piers for the week ended Nov. 7 amounted to 1,168,000 net tons, or a decrease of 39,000 tons from the figure for the preceding week. The tonnage handled was destined as follows:

Destination	New York	Philadelphia	Baltimore	Hampton Roads	Charleston	Totals
Coastwise to New England	68,000	15,000	33,000	109,000	1,000	226,000
Exports	8,000	102,000	181,000	214,000	7,000	512,000
Bunker	114,000	14,000	17,000	55,000	4,000	204,000
Inside capes	.....	40,000	25,000	5,000	.....	70,000
Other tonnage	126,000	.....	7,000	23,000	.....	156,000
Totals	316,000	171,000	263,000	406,000	12,000	1,168,000

A further decrease was noted in the all-rail movement to New England, 4,757 cars being forwarded to the five rail gateways. Compared with the preceding week this was a decrease of 97 cars.

Lake dumpings for the week ended Nov. 14 amounted to 668,950 tons, a decline of 180,000 tons compared with the preceding week. October receipts at Duluth-Superior was the largest of the year for anthracite and bituminous. Cumulative receipts of soft coal were 34 per cent short of 1918 and 16 per cent behind 1919. The distribution of cargo coal actually handled at Lake Erie during the season of 1920 so far has not departed greatly from normal, as indicated by past years. According to the Ore and Coal Exchange, of the 19,091,000 tons forwarded 27.6 per cent went to Canada, as against 21.5 per cent in 1919 and 23 per cent in 1918. Of the coal forwarded to American ports the proportion going to Lake Superior has decreased slightly, while shipments to Lower River points have increased.

ANTHRACITE

Production during the first week of November fell off sharply, 1,390,000 net tons being the output reported by the Geological Survey. The slump was caused almost entirely by observance of the holidays in election week.

The anthracite domestic situation is somewhat easier at inland West points, where receipts have improved lately. Eastern retailers are still apportioning their meager supplies in an endeavor to stretch the tonnage available until additional shipments which have been promised reach them. Prices for the company product are unchanged, although independent operators are still obtaining fancy prices for their coal. The miners' wage question is assuming a serious aspect although it is hoped that trouble can be averted should the demand for a 10 per cent increase be refused.

COKE

Beehive coke production declined during the week ended Nov. 6, a total figure of 388,000 net tons being reported, as against 422,000 for the week preceding. Connellsville reports an extremely weak demand with but little call for free coke. Prices are silghtly lower: furnace $8.50 and foundry $9.50@$11, with first-half contracts being discussed on a tentative basis of $6.

Reports From the Market Centers

New England

BOSTON

Market Is Lifeless — New Low Price Levels Made — Movement Slackens — Labor Is Apparently Indifferent — Colder Weather Brings Fresh Anxiety Over Domestic Anthracite—Light Output with Inadequate Receipts.

Bituminous—The market here is progressively soft. There is an utter dearth of inquiry for spot coal, with no relieving prospect for the near future. There are a few inquiries for delivery extended over several weeks but on such transactions it is difficult for minds to meet, so widely apart are buyer and seller. Industrial conditions are at a low ebb and there are but few large textile or other factories that either have not the coal on hand or have it due on contract that will carry them well into March on the basis of current consumption.

A few sales have been made at less than $5 per net ton at the mines for ordinary Pennsylvania grades. Those that are more eligible for bunker and export trade are commanding from 75c@$1.25 more, but buyers are quite ready to delay purchases indefinitely. Gas coals are also on a much lower level and there is no stability to prices.

Both all-rail and by water there is a marked let-down in receipts. The Hudson River gateways show a gradually sagging movement and this will fall off still further when the railroads have succeeded in accumulating an ordinary seasonable reserve. All the Tidewater piers show less tonnage dumped for coastwise destinations and the trade is agreed that we have some very dull months ahead.

It is apparent, however, that grades like Pools 1, 74, and 9 are to show greater relative firmness than inferior coals. Consumers here have been liberally educated as to the disparity between grades and for that reason the buyers who are particular as to quality will be willing to pay a higher premium than was customary in normal times. No steam-user emerges from such a season as we have gone through in 1920 without some sort of determination to secure good coal if there is a way to get it.

There have been rumors here of the extraordinary state of car supply in the central Pennsylvania district. One story is that there were 2,800 cars on one division of the Pennsylvania Railroad between originating point and the scales waiting consignment.

Labor is apparently quite indifferent to the relaxing demand. The approach of cold weather will somewhat increase the number of hands for the smaller operations but there are still a number of local difficulties which contribute to light output. In many quarters, however, it seems not to be understood that all the props are out from under the market and from now on that it is to be strictly a hand-to-mouth affair.

Current prices at wholesale range about as follows:

		Cambrias and Clearfields	Somersets
F.o.b. mines, per net ton	$4.50@	6.25	$5.25@ 7.50
F.o.b. Philadelphia, per gross ton	7.65@	9.65	8.50@11.00
F.o.b. New York, per gross ton	8.10@	10.20	9.00@11.50

Anthracite—The Massachusetts Fuel Administrator has given new emphasis to the 3-ton limit for delivery to any one place. Local supervisors have also been appointed to regulate deliveries so that the coal now available can be equitably distributed. There is every willingness to co-operate, but the retail dealers are exceedingly anxious over the slowness with which coal comes forward. In the face of this situation a succession of holidays made the output light and undependable.

Tidewater

PHILADELPHIA

First Freezing Weather Finds Dealers with Little Stock on Hand — Early Relief Is Probable — Dealers' Profits Attacked — Steam Trade Moderates — Bituminous Prices Continue To Ease — Consumer Not Inclined To Buy—Export Business Held Back.

Anthracite—Cold weather came with a rush this week, with a mark well below freezing. As anticipated, dealers were besieged for coal.

To add to the difficulty, a prominent local paper has given much space to an alleged investigation of the cost of coal. The basic statement is that the retailers can make sufficient profit at $11.75 a ton as compared with the present average price of $15 for the family sizes. The articles are filled with the grossest inaccuracies which are quite apparent to those in the trade, but the effect on the public generally has been such as to cause them to look upon their coal man with suspicion.

Even though retail yards are nearly empty it cannot be said there is any suffering, which shows the results of big summer storage. Most dealers have small stocks, especially pea, to meet the demands of small users. Fair shipments are on the way to retailers. There is no change whatever in wholesale or retail prices.

The miners' wage question is assuming a still more serious aspect. The belief is growing that unless the demands of the men for a 10 per cent increase is granted, they will take advantage of the approach of winter to go on strike. It is just possible that wiser heads among them will figure out that public sympathy will be somewhat lacking at this time, especially since many of the necessities of life are coming down; the people will likely feel that the miners are being amply compensated.

With the easing of the soft coal market there is a tendency toward anthracite steam sizes becoming a little freer. The larger companies report that buckwheat is not at all free with them, but the smaller concerns, accustomed to a premium of $1 or more, are finding it difficult to get the higher prices. On rice, most of them are glad to sell at company price of $3.25.

Bituminous—The market continues to shade off. All grades can well be included in a price range of $4.00@$7. The former price is that quoted for Pool 18. Buyers having become somewhat used to the various pool qualities, are quite wary of this grade. During the past few days a really favorite price has been $5 simply for a good coal, yet even this fails to move much tonnage.

The consumer is playing a strictly waiting game and is not buying until absolutely necessary. Many have the impression that the price will run down as low as $3. Of course the producers simply look upon such a conjecture as ridiculous. At this time the consumer is being almost bombarded with all sorts of propositions from the producer, both through salesmen and by mail. It has been so long since he has been solicited to buy coal that he views this as evidence of a market collapse and frankly states he is waiting to see just how far prices will drop.

If the authorities should, in the very near future, become a little more liberal in the issuance of export permits, the coal that is now being offered around $5 will look like a real bargain in a couple of weeks. One thing is certain, that quite a few shippers with coal standing at Tide are taking very heavy losses to dispose of coal on hand at the piers.

NEW YORK

Prepared Coals Are Scarce While Steam Is Freer — Improvement Expected with Ending of Lake Season—Bituminous Is Plentful at Tidewater—Prices Lower with Buyers Scarce—Cars Are Adequate.

Anthracite—Prepared coals continue scarce as ever here and the only change is in the steam situation. This market was hard hit by the three-day holiday of the miners but production has recovered and the usual amount of coal is now being received. The loss of tonnage caused by the three holidays is estimated at over 700,000 tons, much of which would have come to this market.

Pronounced changes in the situation

are looked for shortly. The stopping of Lake navigation will help, while other changes will be brought about by the producers themselves.

While the companies and large independent operators are sticking closely to their regular schedule, the small independents are inclined to shade their quotations slightly. Comparatively small tonnage of this coal is coming in, buyers preferring to take chances of securing fuel at the lower figures than to load up with the high-priced coal.

So far consumption has not been heavy. Retailers have not been so hard pushed and in necessary cases have been permitted to either mix or to substitute sizes. Quotations for prepared coals of the small producers were around $13.50 at the mines.

The steam coal situation is much easier. Demand has fallen off. Buckwheat No. 1 ranged $5@$5.75 at the mine. Rice and barley were almost a drug on the market. Rice was quoted $3@$3.75 and barley $1.25@$2. Boiler coal, which is seldom seen in the spot market, was being quoted around $1.90 at the mine. There was no change in company prices.

Bituminous—The slump in the market continues. Buying has fallen off and instead of the buyer hunting coal, conditions are quite the reverse and salesmen are now disposing of their wares at the best price possible.

The closing down of industries has had its effect upon the market. Most manufacturers were well stocked before the slump in business occurred and have stopped shipment of whatever unfilled orders they may have booked. This cancellation of orders has thrown considerable coal back into the spot market. Operators are beginning to feel effects of the low prices and are not now inclined to sell coal below the cost of production.

Coal is accumulating rapidly at Tidewater, the New York Tidewater Coal Exchange reporting 1,897 cars on hand on Nov. 12 as compared with 1,808 cars on Nov. 5.

Ending of the Lake season will have further effect upon this market with increased shipments coming forward. Shippers are making an effort to clean up their outstanding orders before navigation closes but say they have plenty of line orders to take care of any tonnage that fails to reach the Lake ports in time to be carried to its original destination.

Operators complain of the lack of miners, many of whom spend their time hunting instead of at their work. Car supply is good.

Quality figures considerably in quotations. New York Central line coals ranged as high as $5 while coals along the Pennsylvania were slightly lower. Pool 11 was quoted $4.50@$5.50, while Pool 10 ranged $5.25@$5.75. Pool 34 early in the week was quoted as high as $6 and towards the close ranged $5@$5.50. At the end of the week there was an offer made of 11,000 tons of mixed coals at $10.50 alongside. Further declines are generally expected.

BALTIMORE

Big Break in Prices—Many Customers Withdraw from Market—Coal Men Holding Off, Expecting Rebound—Tide Situation Is Easy—Hard Coal Scarcity Is Worst in Many Years.

Bituminous—The decided break in soft coal prices last week caused a considerable upset in all normal trading conditions here. Many consumers are not entirely satisfied with the much cheaper coal offered. On the other hand a majority of soft coal handlers are in no hurry to contract, contenting themselves with spot sales, convinced that a rebound is due shortly.

It was rumored that some high class coal sold at $5 and even under. The lowest figure in anything like a considerable transaction was $5.25@$5.50, this applying to both steam and gas. A week or ten days of almost perfect car supply was a decided factor in sending the quotations downward, but there is a sign of tightening in the fact that the car supply on the B. & O. has dropped below 70 per cent with the Western Maryland supply but little better.

Labor troubles in the Georges Creek and Upper Potomac regions which seem likely to spread and affect 8,000 miners are in line to cut a big figure in the situation, especially as cold weather seems at last at hand. The tide situation is easy, the number of ships waiting for coal cargoes having been cut to about 20, the lowest in many weeks. About 3,000 cars are also on reserve at the piers. Late reports show the market is continuing the decline. Pools 9 and 71 are $5@$5.25 Pools 10 and 11, $4.50@$4.75. Export business is being cancelled and expectations of even lower prices prevail.

Anthracite—The situation here is now truly acute, and all of the principal dealers have entered a series of conferences in an effort to find a solution. Instead of receipts improving, there was almost a cut-off last week, despite the fact that many dealers were willing to take even high priced coal if they could get it. Some of the yards of big dealers are swept entirely clear.

It is estimated that between 12,000 and 15,000 homes here are still without coal.

The city is also concerned and authorities are engaged in a fuel survey, as many schools and fire-houses are without coal. With cold weather actually here the situation is deemed the worst since the anthracite strike of eighteen years ago.

Lake

BUFFALO

Bituminous Close to the Bottom—Selling Is Slow—Consumers Refuse to Stock—Cars Are Plentiful—Dock Fuel Scarce—Anthracite May Come by Special Order.

Bituminous—The market still sags and promises not to firm up till the bottom is reached. Shippers say that it is likely to go below the profit line before it stops and then probably recover a little. Before that happens, however, some sort of reorganization of the labor scale must take place. Not many mines can turn out coal at a profit at $4 a ton, mine price, and that is predicted soon.

As a rule the Buffalo jobbers have not gone into the profiteering schemes and they are now settling back into a regular trade, the others who did do some plunging being glad to join them. It is of course impossible for anyone to make big profits now. The rule is to sell on a 50c. margin, and in some cases even less than that is accepted, in an endeavor to move coal.

Even at that the consumer is indifferent. One jobber complains that no matter how low he makes a price he is told that there are others still lower. It will not answer to sell too close to the market, for before the car reaches destination the price is sure to be off and then there is risk of a cancellation.

Quotations are difficult, as prices are not at all uniform, but a fair average would be $6.85 for Youghiogheny gas, $5.75@$6 for Allegheny Valley mine run, $5@$5.50 for Pittsburgh lump or mine run, $5 for No. 8 mine run, $4.50 for slack and $6 for Cambria County smokeless, smithing being too scarce for quoting. The difficulty in making these mine prices is that they are likely to be too high before they are in print. For Buffalo delivery add $2.36 for Allegheny Valley and $2.51 for other districts to cover freight. No delivered prices are now made.

Anthracite—There is prospect of a solution of the shortage problem by getting coal for the city from the mines direct, the local shipping agents apparently being instructed to send practically everything out by Lake. It seems to be the idea that too many families are out of coal to permit waiting till the Lakes close. It is reported that a consignment of 7,200 tons is now on the way here, through arrangement with the Chamber of Commerce. In case that is not enough the city council is studying the legality of seizing coal as it comes in for Lake shipment.

It is said that there are 3,000 families without coal and the fact that several thousand have a full winter supply does not appeal to the destitute. The end of the Lake season is now only about three weeks away, when coal ought to be plentiful here. The mistake was made in giving too much to certain ones early in the season, this being easier and cheaper than to send out a ton or two on an order.

Lake—Shipments for the week were 99,450 net tons, of which 38,200 tons cleared for Duluth and Superior, 31,300 for Chicago, 21,700 for Milwaukee, 4,700 for the Sault, 2,200 for Quincy Mines, and 1,350 for Racine.

Freight rates are advancing, being $1.75 to Quincy Mines, $1.60 to Racine, $1.25 to Chicago and the Sault, 75c. to Milwaukee, and 60c. to Duluth.

Coke—Demand is not steady, but jobbers are doing something in the remnant line at $14 for 72-hour Connellsville foundry, $12@$12.50 for 48-hour furnace, and $10 for off-grades and stock. It is pretty hard to get coke, as so much of it is contracted and no new ovens are coming in. The furnaces are not running as strong as they were. Domestic sizes are in demand, competing with anthracite, at $7.50 for large sizes, $10.50 for nut, and $2.75 for breeze.

CLEVELAND

Coal Receipts Gain — Prices Continue Soft — Holidays Hit Operations — Demand Declines as Buyers Anticipate Freer Supplies and Lower Quotations— Operators Appeal for More Cars.

Bituminous—Mines in the No. 8 district have not attained the height of production hoped for, as a result of church, election and armistice day holidays which have been seized upon by miners as vacation opportunities. The car supply also has not been averaging more than 50 or 60 per cent. The Pittsburgh Vein operators have appealed to Washington for more cars and the Interstate Commerce Commission has wired promise of working out a remedy. The greatest shortage is on the Baltimore & Ohio R.R., which serves a large part of the No. 8 district.

Despite all of the handicaps, however, the situation is decidedly easier. Not only are receipts improving steadily, but the demand is declining. Industrial demand is falling because of the pronounced slackening of plant activity. Retail demand is less because of the growing belief that fuel supplies will be much more ample and cheaper after the close of the Lake season Nov. 24. This event will release from 2,000 to 2,500 cars of coal for other markets daily.

At the present time receipts in Cleveland average 87 cars daily against 64 cars one month ago. A development of some significance is the lack of interest on the part of users of steam and other grades in securing stocks. At this time of the year industries usually are buying for reserves.

Pocahontas and Anthracite—Despite real improvement in the entire coal situation there is still a lack of these grades. Dealers, however, are rapidly making deliveries and are not more than two weeks behind. Domestic users are sure to benefit both in freer supplies and lower prices from the release of the coal now going up the Lakes. The Chamber of Commerce Retail Coal Committee reports that no complaints of suffering from lack of fuel or failure to get deliveries are now being received.

Lake—Suspension of Order 10 has reduced the volume going to the Northwest. The average shipments are now running somewhat less than 2,500 cars. Lakes movement to Nov. 1 was 19,000,000 tons against 21,000,000 in 1919.

Retail prices of coal delivered in Cleveland are:

Anthracite—Egg, chestnut and stove, $15.
Pocahontas—Shoveled lump, $11.75; mine run, $11.25.
Domestic Bituminous—West Virginia splint, $11.75; No. 8 Pittsburgh, $9.50; cannel lump, $15.
Steam Coal—No. 6 and No. 8 slack and mine run, $10.25; No. 8 ¾-in. lump, $10.25.

MINNEAPOLIS

Reduced Consumption Improves Situation — Bituminous Shortage Estimated at One Million Tons—Docks Are Making Careful Distribution.

A touch of severe weather gives warning that winter is at hand. But the mild fall has certainly resulted in a considerable saving, particularly with domestic users. While domestic consumption is largely a hard coal proposition, yet soft coal has also shared in the saving.

Anthracite receipts to the last of October are only 17,000 tons less than for 1919, and the amount saved in reduced fall consumption will more than make up that amount. While it cannot be expected that hard coal will be plentiful, it now seems very probable that there will be enough to "get by."

The bituminous shortage is somewhat improved through this saving and other factors heretofore touched upon. These include the diversion of a considerable tonnage of railroad orders to the Illinois fields as well as some other large users. Dock receipts to the end of October show deliveries of 4,560,000 tons and last season's 5,772,000 tons. Last year 2,000,000 tons of coal were carried over, but only 800,000 tons this spring. The total shortage this season is around 2,400,000 tons. However, through the above factors, this is cut down to a considerable extent. When these allowances are considered, the net shortage existing is not more than 1,000,000 tons.

Members of the dock trade hope for sufficient coal to drag through without serious difficulty until spring, but fail to see how it is going to be done. They believe that the all-rail trade will have all it can do to handle the business it has assumed without making up any such shortage. Railroaders hope for a continued improvement in their deliveries, which they insist is wholly a matter of cars.

In the meantime, the same grade of coal is quoted $8.95@$13.50. Docks are not anxious for business at any price, feeling sure that there will be need for all the coal on hand now or to be dumped by the close of navigation.

MILWAUKEE

Market Is Quiet and Steady — Cold Weather Stimulates Demand — Wholesalers Undergo Grilling Following Complaints of Profiteering.

A spell of cold weather has stimulated demand to some extent, but there is no rush and all anxiety as to the winter supply seems to have subsided. Cargoes are arriving daily and the flow of soft coal by rail from Illinois and Indiana is steady and in good volume.

It is more and more apparent that Milwaukee will have to depend upon the rail supply during the winter. Bad weather and track blockades will entail suffering in the interior.

Representatives of six big distributing companies were grilled on Nov. 10, by Alvin C. Reis, legal advisor of the State Marketing Commission, for the purpose of discovering whether or not dealers are in any way responsible for alleged excessive prices. Complaints have reached the state authorities that $24 per ton is exacted for anthracite and $18.50 for soft coal. If it is proven that Wisconsin dealers are blameless, the matter will be placed in the hands of the Federal authorities for acting.

Edward A. Uhrig, president of the Milwaukee-Western Fuel Co., bore the brunt of the grilling. He attributed present high prices to huge exports, frenzied buying at the mines and the breakdown of the transportation system of the country from April to the present date.

Mr. Reis repeatedly attempted to uncover possible price agreements, but all the witnesses denied having any knowledge of quotations set by their competitors. Hearings will be held at a number of other points in the state.

Inland West

DETROIT

Steam and Domestic Are in Less Demand—Bituminous Receipts Increase—Prices Show Lower Level—Anthracite Supply Still Inadequate.

Bituminous—Interest of buyers has diminished in both steam and domestic markets. Wholesalers and jobbers report the bituminous situation considerably easier than it has been during recent weeks.

Economic conditions affecting business and bringing about a reduction in the activity of manufacturing plants have developed a more conservative attitude on the part of buyers. They are now taking only enough coal to meet current requirements and show a disinclination to increase reserves.

Domestic buyers also have been rather indifferent, comparatively moderate temperatures having relieved the pressure of demand on retailers. The belief that lower prices may be quoted is probably a factor in encouraging delay. The advent of winter weather will stimulate domestic demand.

Prices show quite material reductions, while the supply of coal of the better grades is increasing gradually as the result of declining Lake shipments. Domestic Hocking lump is quoted $7@$7.50 at the mines; mine run is selling $5.50 and slack $5@$5.25. The product of other Ohio mines holds about the same level. West Virginia lump is $8, with mine run ranging $6@$6.50 and slack $5.75.

Anthracite—There is little improvement in the situation. Retail yards are without reserves and shipments coming to Detroit are small and delivery more or less uncertain. Because of this condition many dealers are

mal quantities. Anthracite shipments recommending the substitution of coke or bituminous coal. The hope is still expressed that shipments will be sent forward in larger volume after the end of navigation.

CINCINNATI

Demand Is Excellent—Mine Conditions Improving—Retail Prices Are Firm—River Wave Bringing Coal — Good Buying for Reserve.

Operators, jobbers and retailers are awaiting the much-heralded reduction of coal prices. Many of them are able to fill all orders received, although experiencing great difficulty in obtaining smokeless supplies.

The demand continues excellent. Industries are seeking all the coal they can get and are being supplied in a manner that bespeaks nothing but a plentiful supply for these parts this winter. Conditions at the mines are improving. Transportation conditions on all the roads are better and are expected to improve further.

Users of coal have followed the advice of the coal men to lay in their winter supply wherever it was possible and as a consequence it is estimated that 75 per cent of the local trade is stocked up for the cold months.

Operators and wholesalers say there has been no great changes in prices that have prevailed for the past few months. There has been no change in the retail situation. Conditions on the Ohio River are very bad, owing to the low stage and there have been very few shipments in the past few weeks via that route. There will be no more shipments until the artificial wave is created next week.

Retail prices now being obtained in the Cincinnati market are as follows:

Bituminous lump, $9.25@$10.50; nut and slack, $8.50; run of mine, $8.50@$9.25.
Smokeless lump, $11@$11.25; run of mine, $10.
Anthracite, chestnut and egg, $14@$15.
Coke, domestic egg, $14.50@$15.

COLUMBUS

Still Further Weakening in Steam Coal—Domestic Remains in Good Demand with Prices Showing Some Recession—Lake Trade Is Fairly Active—Production Gradually Increasing.

Domestic trade is still the big feature of the coal business in Ohio. Demand continues brisk and a larger tonnage is moving. Many localities still have only very small stocks for distribution. This is especially true of rural sections, where dealers hesitate to pay the extreme prices.

Retail prices are still high, although a downward trend is noted. Hocking lump sells $9.50@$10.50 while Pomeroy is slightly higher. West Virginia splints retail $10@$11.50 as the market is not yet affected to any extent by lower prices at the mines. Pocahontas remains scarce and sells $12@$14.50.

Steam grades continue weak and there is an absence of buying from large industrial centers. Prices have declined to about $3.75@$5.50 for Hocking and Pomeroy grades and $6@$7 on West Virginia splints. Some Kentucky coal is finding its way in. Railroads are taking a fair tonnage. Reports show that large users have reserve stocks to last for 60 days and even longer. Screenings are extremely weak, selling $3.50@$4. at the mines.

Lake trade is still active and a fair movement to the Northwest is reported. Vessel movement is good and while insurance is off Nov. 15 shipments will continue for several weeks after that date. The Toledo docks of the H. V. Ry. during the week ended Nov. 6 loaded 175,188 tons; the T. & O. C. docks loaded 90,258 tons.

The car supply is improving slowly. Reports show an output of 70@75 per cent in the Hocking Valley and about 65 per cent in Pomeroy Bend. Eastern Ohio had a better run with 65 per cent output. Cambridge and Crooksville had 65 per cent.

Prices at the mines of the principal coals used in central Ohio are:

Hocking lump	$4.50@$7.00
Hocking mine run	$4.00@$4.75
Hocking screenings	$3.50@$4.25
Pomeroy lump	$4.75@$7.25
Pomeroy mine run	$4.00@$5.00
Pomeroy screenings	$3.50@$4.25
West Virginia splints lump	$5.50@$7.25
West Virginia mine run	$5.00@$6.00
West Virginia screenings	$4.00@$4.25
Kentucky lump	$6.00@$7.25
Pocahontas lump	$6.75@$7.75

CHICAGO

Market Is Greatly Weakened—Present Stocks Are Good—Many Cancellations Noted—Receipts Are Entirely Adequate.

Retail yards are clogged and manufacturers have sufficient coal on hand to care for present meager consumption. Orders are being cancelled and this has demoralized the local market to some extent. Jobbers have felt the cancellations most as the buying public has been waiting for an opportunity to get back at this branch of the coal industry. The public in a great many instances feels that it has been exploited. This feeling applies to a great many concerns of mushroom growth who have been attracted to the industry because of the opportunity for excessive profits.

One rather amusing instance of this feeling came to light last week. With the general easing up of the market, one dependable operator found himself with a little extra coal on hand. One of his largest customers came into his office and requested that his shipments be doubled. The operator was expecting to have his order cut down. The explanation was that the manufacturer had cancelled a number of orders placed with some jobbers as he knew it would embarrass them to have the coal on the open market at this time. He also knew that the operator would probably welcome an opportunity to ship a little extra coal on contract and thus took advantage of the situation to pay off an old score and at the same time do a favor.

Good grades of Eastern coals are coming into the market in almost normal quantities. Anthracite shipments have been very gratifying and people now find that their patience has been rewarded and they have an ample supply on hand. The situation is nearly the same on Pocahontas and New River coals, although the prices on these two are still abnormally high. West Virginia and Kentucky splints are coming in fairly good quantities and being sold at prices running $6@$8 per ton for the block sizes.

Southern Illinois prepared sizes are $5.50@$6.25; mine run, $5@$6; screenings, $4.15@$5.25. Springfield district prepared coal, $4.75@$6.25; mine run, $4@$4.75, and screenings, $3.25@$3.50. Northern Illinois, $5.50@$6.50 for domestic; mine run, $4.50@$5.50, and screenings, $4@$4.75. Indiana fourth vein outside the state ranges $5.25@$6.50 for prepared; $3.75@$4.50 on mine run; fifth vein prepared coal is $5@$6.50; mine run, $4.25@$5, and screenings, $3.25@$4.

MIDWEST REVIEW

Colder Weather Strengthens Domestic Demand—Steam Market Is Very Weak—Operating Conditions Are Improved.

During the past few days the weather has been much more seasonable. This has had a noticeable effect on the demand for domestic coals but has had no influence whatsoever on the steam situation. The steam market by the way, is weakening day by day. Good Indiana steam lump three or four weeks ago sold at $7@$8.50 per ton, f.o.b. mines. Today this coal is offered at $5.

The current market on mine run and screenings is very weak and is without prospect of immediate improvement. The slump in manufacturing which seems to have swept the whole country is being felt in the Middle West pretty seriously. The few industries which have so far withstood the times and have continued operating, find themselves with plenty of coal on hand and prospects of more at a cheaper price. Many lines of business have temporarily ceased operations, principally on account of lack of orders.

Operating conditions in all important producing centers continue to improve. Car supply during the last week has been very satisfactory and mines in some locations have received better than an 80 per cent supply.

Labor is steady and the men are showing an inclination to attend to business, a condition which was conspicuous by its absence a few months ago. The week just ended shows the coal market one step nearer to normal.

ST. LOUIS

Seasonable Weather Enlivens Domestic Market—Steam Conditions Easy—Car Supply Is Good and Movement Better—Steam Prices Rally.

The St. Louis situation continues to take on an easier tone. Seasonable weather has helped conditions, especially as regards steam. The Standard screenings market still continues to be $3.25@$3.50 locally, with somewhat better prices prevailing on country

shipments. However, the outside steam call, is also getting lighter. This is taken up in a measure by increased railroad tonnage of mine run. Production of domestic is sufficient to take care of the local call, but the country demand at times exceeds the supply on account of restrictions and unequal rates.

Car supply in the Standard and Mt. Olive fields showed up better than 50 per cent on commercial. Armistice day saw most of the mines shut down, the few that did work marking half time.

There are a few labor troubles in the Standard field, but nothing serious. Prices on mine run were $4@$4.50, lump $4.25@$5.50 locally. Outside shipments averaged 50c. higher. Circular prices in Mt. Olive prevail, $4@$5 on all domestic sizes with steam applied almost entirely on contract.

In the Carterville field better working time prevails on account of a good car supply, occasioned by quicker movement. The supply was better than 60 per cent for commercial on all lines, excepting the Missouri Pacific, where mines are working better the past week than for sometime, owing to railroad tonnage. Circular prices prevail from $4@$5.50 among the larger operators, with a few independents asking as high as $7.

In St. Louis proper there is very little storage coal ahead. A few cars of anthracite moved in during the past week and also some smokeless, with considerable domestic coke from Alabama. Domestic conditions are easy, with light demand. There is no change in retail prices.

South

LOUISVILLE

Prices Are Softening as Steam Demand Drops — Domestic Sizes Are Scarce — Wide Range of Mine Prices Noted — Further Declines Seen.

Demand for steam coal has weakened perceptibly during the past ten days, resulting from the fact that the Lake season is about over, and industrial consumption is slowly lagging.

Retailers are demanding lump coal as the domestic consumer wants that grade and nothing else. The operators are producing about 90 per cent mine-run. Now that demand for steam is easing off and car supply is improving it is high time that the producer gives the retailer what he wants.

Retailers and jobbers are complaining about the tactics of some Kentucky producers, who after accepting orders will probably ship one car, and then claim that failure of car supply, or duplicate selling through another officer of the company, makes it impossible to ship at the present time. There is also a tendency to sell to the highest bidder.

It is claimed that by January many of the operators will again be soliciting for business to keep their mines working, although some real severe weather may change that prospect. Some coal men expect to see mine run as low as $4 by the end of the month if production continues on the present basis.

One jobber from letter offers on his desk quoted the following prices—Blue Gem block, $10.50@$10.75; mine-run in box cars, $7.50; open cars, $8.50; Elkhorn mine-run in box cars, $6.75; Cannel block, $11.

Eastern Kentucky coal is quoted at prices ranging $5.50@$6.50 for steam grades, the market being principally a question of what the operator has to sell, and how badly it is wanted.

Louisville retailers are quoting eastern Kentucky and West Virginia block, $11.50; mine-run, $11; nut and slack, $10.50. West Kentucky lump, $10.50; mine-run, $10; screenings, $9.

Domestic sizes are strong, due to colder weather, prices ranging up to $9.50, with some operators caring for old customers at $6.

BIRMINGHAM

Slack Demand and Increased Production Lowers Steam Prices—Domestic Inquiry Is Good and Exceeds the Supply—Labor Becoming Very Plentiful—Supply of Cars Equal to Requirements.

The steam market has been very easy the past week and the needs of the trade have not been sufficient to absorb production of the lower and medium grades. There has been no accumulation of Cahaba, Black Creek, Pratt and the like, as only small lots of these coals are available above contract requirements. Weakened trade conditions are due to a general industrial recession, many plants throughout this territory either closing down or going on short time. All those in operation have coal stocked and the railroads and utilities now are in a comfortable position.

Quotations for steam are somewhat off, Black Creek and Cahaba ranging $5@$7, Big Seam $4@$5, Jagger and other Carbon Hill grades being offered $4.50@$5.

The domestic situation is easier as a result of the 18-day order restricting shipments to confines of the state, and all urgent needs have been met. There has been no opportunity for stocking, however, and yards have little or no supply on hand. Some mine run coal has been sold for domestic use and a much greater tonnage will have to be diverted. Domestic mines, hampered by strikes and car shortage since early spring, have been unable to fill contracts and have cancelled all delinquent deliveries. Prices range $4@$6 for prepared sizes.

Labor is drifting into the mining field more rapidly than it can be absorbed. There is now a surplus of unskilled labor at all points easily accessible from this city and larger towns. The force of miners is also nearing normal, but irregularity in reporting for work is holding down the output. Cars are being supplied in sufficient numbers to avoid any delay to operation in this direction.

Western

DENVER

Lignite Miners Returning, Following Industrial Commission Ruling—Prices Remain Steady.

Colorado's lignite output is nearing normal again, following the return of most of the miners who struck to enforce a demand for recognition of the union. Prices at mines are about the same as before the trouble, which ended suddenly when prosecution was threatened by the State Industrial Commission.

The commission contended that the men walked out after the matter had been set for hearing, contrary to law. Operators thus far have refused to deal with union leaders, although the men were ordered back to work by the policy committee with that sort of a promise held out for them by leaders.

This action came only a short time before the decision of Judge Bradfield of Weld County, who, in supporting the industrial act, found twelve former officials and members of the miners' district board guilty of "aiding, inciting and encouraging a strike." The cases dated back a year, but in many respects were similar to the recent troubles.

Prosecution in the old cases was based on the premise that "coal mining is vested with a public interest." Union leaders are preparing to attack the constitutionality of the industrial law on that ground by appealing the cases.

Canada

TORONTO

Conditions Are Improving—Shipments Arriving More Freely — Bituminous Easier — No Hardship Feared During Winter.

Conditions in the coal trade are improving and both anthracite and bituminous are coming forward more freely, with wholesale prices for the latter easier. The lessened demand for soft coal by many industrial plants makes the shortage less seriously felt than would otherwise be the case.

Comparatively mild weather has rendered the domestic demand for anthracite less urgent than usual at this season, Fuel Controller H. A. Harrington is in full charge of the situation and states that a strict watch will be kept over deliveries and people with well-stocked cellars will not be allowed to obtain additional supplies until others are furnished.

Quotations per short ton are as follows:

Retail:	
Anthracite, egg, stove, nutand grate	$16.90
Pea	15.40
Bituminous steam	16.00@17.40
Domestic lump	18.15
Cannel	20.00
Wholesale f.o.b. cars at destination:	
Three-quarter lump	13.25@14.00

News From the Coal Fields

Northern Appalachian

PITTSBURGH

Consumption Decreasing and Prices Decline—Car Supply Is Not So Satisfactory—Cold Snap May Cause Market To Stiffen.

Operators do not expect the car supply to be very materially diminished by modification of coal-car definition that went into effect Nov. 7, whereby flat-bottom gondolas 42 inches and under are excluded. It is felt that industries do not need cars as much as they did a month or two ago, while at the same time the lower rate of industrial operation will reduce their consumption, so that coal requirements will be decreased. In the past few days, however, there has been a serious shortage, particularly on the Pan Handle. Lake shipments are now nealy ended, and this will increase car supplies for other trade.

Prices have continued to sag, being off 50c.@$1. The market as reflected by regular sales in the past few days may be quoted $4@$4.50 for steam and $5@35.50 for screened gas and by-product. The leading interest's price remains at $3.75 for mine run, where it has stood since the wage advance of last August. This interest's production is, however, fully absorbed by shipments on contract. Its retail price at yards in Pittsburgh is $6.

Still lower prices are expected, if demand continues light, while a cold snap might send prices upward again. There is some discussion as to whether the highest priced sellers of the past few months, who have no regular customers, will attempt to buy their way back into the market by selling coal at a loss, or will submit to a period of idleness, in which their costs can be reduced.

CONNELLSVILLE

Spot Demand Is Very Light—Pace of Price Decline Moderates — Production and Consumption Decreasing.

Demand for spot furnace coke has been extremely light, while there has been only a very moderate demand for foundry. There has been much blowing out and banking of blast furnaces, and more is in prospect. Contract deliveries have been very good in consequence of the decreased requirements, and it is only occasionally that a furnace has to enter the spot market. Operations at the foundries are decreasing, but there is still a fair demand. On account of the decline in prices foundries are less disposed to accumulate stocks, and the current buying barely equals consumption by foundries not having regular contracts.

The spot market is down only 50c. in the week, against $1 decline the preceding week $7 in the fortnight before. Spot quotations now are $8.50 for furnace and $10.50@$11 for foundry.

There is some discussion as to prices on furnace coke contracts for the first half of the new year, but it can hardly be said that there are active negotiations. No flat prices have been quoted or bid. As to ratios, many operators are arguing that a 4 to 1 ratio will prove proper, but furnaces do not admit their willingness to consider anything better than 5 to 1, which would make $6 coke in case basic pig iron declined to $30 from its present level of $38.50. One small contract at 5 to 1 has been made for the last two months of this year.

The *Courier* reports production in the Connellsville and Lower Connellsville region in the week ended Nov. 6 at 201,950 tons, a decrease of 22,345 tons.

UNIONTOWN

Market Weakens, but Prices Are Stationary—Rejections of Inferior Grades —Car Supply Declines Slightly—Poor Transportation Conditions Growing.

While still extremely soft, no further price recessions have been made in the local market. Prices for both coke and coal have remained fairly stationary, but without any of the stabilizing characteristics that would indicate a solidification of the present price range. Further losses are expected before gains are registered, the steel outlook precluding any return to high prices.

Coal continues to range $4@$5. Grades have practically vanished in the general market slump. Quality is now of prime importance, as the volume offered makes transactions in questionable grades very distasteful to the wholesalers. Rejections have been numerous and consequent losses heavy.

Coke is well fixed at $8@$8.50, prices varying throughout the course of every day. Operators strenuously object to the present market level, owing to increase rather than reduction in operating costs, but so great is the volume of product offered that supply and demand will not permit of any present stiffening in price.

Car supply has slackened a bit during the past few days, the slump from the maintained 100 per cent placement being very slight, however. Chief trouble again is centered on the Pennsylvania lines.

CENTRAL PENNSYLVANIA

Spot Market Reaches Lower Price Level—Canadian Railroads Buy Heavily—Full Car Supply in Field.

The market continues fair, but is no longer marked by the intense scramble so characteristic during the early fall. Operators have begun to carry out the spirit of the resolution adopted a week ago with the view of eliminating outlaw buying which created artificial prices. Representatives of Canadian railroads entered the field during the week and made heavy purchases of fuel and their presence has helped to maintain work at a number of operations.

Estimates of Production

FROM THE WEEKLY REPORT OF THE GEOLOGICAL SURVEY

BITUMINOUS COAL

	1920 Week	1920 Calendar Year to Date	1919a Week	1919a Calendar Year to Date
Oct. 23b	12,732,000	440,557,000	13,140,000	389,651,000
Daily average	2,039,000	1,749,000	2,190,000	1,547,000
Oct. 30b	12,418,000	452,976,000	12,111,000	401,762,000
Daily average	2,070,000	1,756,000	2,019,000	1,558,000
Nov. 6c	11,355,000	464 331,000	3,582,000	405,344,000
Daily average	1,893,000	1,759,000	597,000	1,536,000

ANTHRACITE

	1920 Week	1920 Calendar Year to Date	1919a Week	1919a Calendar Year to Date
Oct. 23	1,915,000	68,935,000	1,992,000	68,109,000
Oct. 30	1,696,000	70,631,000	1,475,000	69,584,000
Nov. 6c	1,390,000	72,021,000	1,972,000	71,556,000

BEEHIVE COKE

United States Total

Week Ended Nov. 6c 1920	Week Ended Oct. 30b 1920	Week Ended Nov. 8 1919	1920 to Date	1919a to Date
388,000	422,000	375,000	18,076,000	16,574,000
		Daily Average		
65,000	70,000	63,000	68,000	62,000

(a) Less one day's production during New Year's week to equalize number of days covered for the two years. (b) Revised from last report. (c) Subject to revision. All figures in net tons.

Spot prices have reached the lowest level since the fuel administration ceased to function, having dropped 50 per cent as compared with two weeks ago. High grade low-volatile coal is now selling $5@$5.50. Some sales have been made as low as $4.75. Operators with contracts in some instances are receiving slightly more than the spot market prices.

Throughout the Central Pennsylvania field 100 per cent car distribution has been maintained lately.

FAIRMONT AND PANHANDLE

FAIRMONT

Price Slump Continues—Cars Are Plentiful but Election Holidays Cut Fairmont Production — Confiscations Arouse Operators—Panhandle Placement Also Improves—All Demands Are Weaker.

Election activities cut production to a marked extent during the opening week of the month, despite the fact that there was opportunity for a larger output, owing to increased car supply. Because of time lost during the early part of the week, mines were unable to load all the cars furnished during that time, with the result that there were more cars available than usual during the last three days of the week. The run of cars on the Western Maryland, Monongahela and the Charleston Division of the Baltimore & Ohio was larger than usual.

Methods of the B. & O. in confiscating coal where characterized as high-handed by operators. Early in the week the railroad announced it would confiscate loaded cars.

Prices continued to slump as a result of the decreased demand. Producers were seeking business instead of letting business come to them. It was apparent that increasing production was having a most potent effect in pushing prices downward. They reached as low a level as $4.75 for Pool 44 and $5@$5.50 for Pool 34. Producers were looking more and more to export markets as the demand for Inland decreased. The call for export coal was only fair, however.

NORTHERN PAN HANDLE

Loadings were larger during the first week of November at mines served by the Pennsylvania than at those dependent upon the Baltimore & Ohio. Pennsylvania mines had 100 per cent car supply while plants on the B. & O. lost a day or so during the weekly period.

Tonnage produced, however, sufficed for general market demand, which was even more listless than during the preceding week. Prices continued to decline, particularly on slack coal and for Lakes, the latter price even reaching the low level of $4.75. The prevailing figure much of the time during the week was about $5.

Despite the accumulation at Lakes, rail movement was fairly good. Water transportation, however, had been somewhat hampered by the low stage of the Ohio River.

Industries in the Wheeling District were plentifully supplied, according to the representative on the Fair Practices Committee, and no fear was expressed that Wheeling industries would run short of coal.

Middle Appalachian

LOW-VOLATILE FIELDS

Election Idleness Cuts Production—Cars Nearly Adequate for Available Tonnage—Tide Shipments Curtailed—Sharp Slump in Demand—Prices and Conditions Almost Normal.

NEW RIVER AND GULF

General conditions in the New River field at the outset of November were not particularly conducive to a large production. The election interfered with operations for several days. There was furthermore an actual shortage of cars, although that was not so patent because of days missed during the early part of the week.

Smokeless coal and New River coke were beginning to feel the general effect of a falling market, there being a lessened call for smokeless, although the Tidewater demand was holding up rather well. However, there were few boats awaiting cargoes. Coke was off, having declined to $12@$14. Mine run was not bringing more than $5@$5.40 a ton, with export coal at $8. There was so much coal at the Lakes that little tonnage was going there and the weather had greatly weakened the Western markets.

Loading fell off to a very considerable extent in the Gulf region, the election being largely responsible. Hence both the Virginian and the Chesapeake & Ohio railroads were able to provide about all of the cars which could be handled.

As so large a part of the Gulf output was under contract, even though there was a very weak spot demand, it failed to affect conditions to any appreciable extent. Loads were not being pulled as promptly as was to have been expected, owing to the poor condition of C. & O. motive power.

POCAHONTAS AND TUG RIVER

Lowered production in the Pocahontas region during the first six days of November followed in the wake of the election. Activities of third party leaders had of course been limited by the injunction in force as to the organization of the Pocahontas field, but many miners made the first three days of the week a holiday.

Owing to this idleness losses recently observed from a car shortage did not appear on the surface.

Most of the Pocahontas production is being applied on contract, there being little spot business. In fact the only spot demand is in Virginian cities. There has also been a diminution of the demand in Western markets, which appear to be fairly well supplied. The spot business at Tide has fallen off and much of the coal now dumped is on contract. Market conditions, as they affect Pocahontas coal, are now regarded as being back on a normal basis again.

The election also affected Tug River production, little being accomplished during the first half of the week. It was not until about Thursday that the men were back at work in their usual numbers.

There was anything but an active market and unless there should be a change in present conditions it is believed there may be a lessened production by the first of the year because of "no market." The spot market is extremely inactive, especially in the West. There is even an absence of that strong spot demand at Tide so much in evidence a few months ago. Much of the coal now moving to Tidewater is on contract. Conditions are now more nearly normal than they have been for some time.

HIGH-VOLATILE FIELDS

Production Suffers from Election Idleness—Intimidations Renewed in the Thacker District—Price Recession Is General—All Demands Are Weaker—Car Supply Shows No Material Improvement.

KANAWHA

Not only did the election hamper production, but during the latter part of the week ended Nov. 6 a marked shortage of cars on the Chesapeake & Ohio also affected the output.

The volume of tonnage moving Lakeward was of course small with prices down. As a matter of fact, Lake shipments made were largely on outstanding orders.

Prices were still on the decline, hovering around $4.75 a ton for Inland markets, with inquiries growing less. While the demand was somewhat better for domestic lump, mild weather was exerting an effect on the market, though prices for domestic were about $6. It was difficult to ship much coal to Tide or Eastern markets, owing to a growing accumulation. For a time during the week the prevailing price for Tidewater was $8.

NORTHEAST KENTUCKY

Reduced production in the week ended Nov. 6 was due largely to cessation of operations at a good many mines on election day, so that the total output was only 53 per cent of capacity. Car shortage losses were less, having been trimmed down to 35 per cent, but that was because of the election idleness which forced the labor shortage losses upward. There was no actual improvement in car service.

Market conditions were such as to absorb the entire output, even though the demand was not particularly brisk. Conditions seemed to have become more stabilized than during the final days of October, though prices were still receding somewhat. Much coal was going into Kentucky markets, though some was finding its way to the Lakes.

VIRGINIA

Election day and its attendant idleness materially interfered with production. Aside from that operation was at the rate of about 90 per cent of capacity, with the car supply sufficient for all purposes. A further labor shortage also curtailed production.

In sharp contrast with other bituminous regions there was a strong market for Virginia coal and the prevailing price at the beginning of the month was close to $7. Little or none of the output of southwest Virginia was being exported. Mines continued their special effort to supply the needs of home industries and domestic consumers which of course strengthened and increased outside calls for spot coal.

LOGAN AND THACKER

Election day played havoc to some extent with production in the Logan field which only reached 185,000 tons last week, an output much below that recorded during the greater part of October, when the monthly output totaled 948,634 tons or 54 per cent of capacity.

Ground was regained during the latter part of the week but not enough to replace the loss. There was not much more than 4,000 tons consigned to Lake points and little of that was on spot orders. Lake prices were far from attractive, not being much over $4.75 a ton. For that matter there was little activity in Western markets insofar as conditions were reflected in the Logan field, where the general run of prices were around $5, with the prospect that they would go even lower.

Though production fell down to the extent of 12,200 tons in the Thacker field last week, conditions continued to improve in the strike situation. However, with Federal troops no longer on duty in the strike zone efforts at sabotage and intimidation were resumed, which resulted in the dynamiting of several plants and one railroad trestle, with numerous threats, so that producers are certain that the strikers would make one last desperate effort before giving up their attempt to organize the Williamson field.

In the strike zone during October there was an output of 103,000 tons, an increase of 60 per cent over September. At the end of the month more than 1,400 men were at work, that being an increase of 40 per cent over September.

Southern Appalachian

SOUTHEASTERN KENTUCKY

Car Supply Slumps — Demand for Domestic Is Good — Tendency Toward Higher Prices.

Car supply has reached the lowest point possible, without complete cessation of work, mines barely getting one day supply per week. Strong demand coupled with the severe car shortage is causing many operators to openly threaten to sell for more than the $6 maximum set by Government officials.

The Cumberland Valley Division of he L & N has a capacity of about 1,600 cars per day, whereas not more than an average of 400 is being loaded. Such a low ebb leaves but little spot coal. The little free prepared coal is eagerly bought with no question as to prices.

Export demand continues good, but there is no coal for shipment. The lifting of the compulsory Lake order has caused but little change in marketing outlets from this field.

Results of the election seem to greatly please most of the operators, for they are inclined to believe that a change of administration can at least work no harm, whereas there is great hope that the new administration will attempt to work in greater harmony with the industry.

Middle Western

WESTERN KENTUCKY

Prices Are Softer As Result of Competition of Other Fields—Demand Is Good and Movement Steady—Production Increases with Better Car Supply.

Better car supply has been noted so far for November. The Illinois Central R.R. supplied 74 per cent of mine ratings and the L. & N. furnished up to 52.6 per cent. These are the best averages shown in many months.

Railroads are taking a fair volume of coal, while there is a good demand for both steam and prepared sizes coming from various districts. Movement of steam coal has increased rapidly, while the demand for lump continues good. Southern movement is especially good at this time, short freight hauls aiding. In the Northern fields competition for business is increasing as Lake demand falls off, and more coal is being offered than heretofore.

The price range is rather wide. One jobber reports that he has been offered mine run at $5.25; 4-in., $4.75; lump, $6.50; nut and slack, $4.75. A range average for the field as quoted by the West Kentucky Coal Bureau shows lump, $6.46; mine run, $5.02; nut and slack, $3.52.

Prices range $4.50@$8 on lump, $4.60 @$7.25 on mine run, and $3.75@$7.25 for screenings.

DUQUOIN

Car Supply Improves—Heavy Northwest Shipments—Labor Situation Is Good—Domestic Price Declines.

The car supply has improved somewhat over the preceding week. Not a single mine was reported as being idle on account of car shortage.

It is reported that the coal famine which was expected in the Northwest is averted, due to the enormous tonnage unloaded there during the months of October and September from Illinois and Indiana. More coal has been shipped to that region from this district in the past two months than ever before.

While production has been increased and the weather has continued warm, prices seemed to hold their own. Many of the producers are beginning to get caught up with their contracts. Very little change was noticed on mine run, remaining at $4@$4.25; screenings dropped to $3.75@$4; lump to $4@ $4.50.

Western

UTAH

Car Shortage Continues — Retailers' Supply Is Short—Much Interest Shown Over Rate Controversy.

Losses from car shortage continue. Some relief is in sight, however, according to H. W. Prickett, of the Utah Traffic Service Bureau, who has just returned from Washington, D. C. where he went in the interest of intermountain traffic matters. Dealers are getting very short of supplies now that the weather has turned colder.

Fight between the Interstate Commerce Commission and the Utah Public Utilities Commission over freight rates is now on. It will be remembered that the Interstate Commission allowed the railroads an increase and the Utah commission, claiming the right to regulate all public utilities in the state, refused to permit the new rates allowed by the interstate body. The coal operators, among other large shippers in the state, made a strong appeal against the increase.

Canada

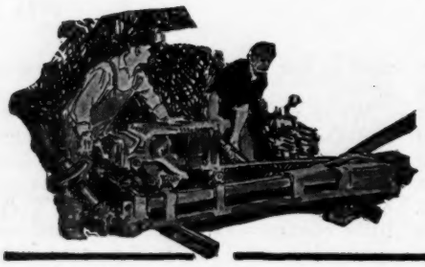
BRITISH COLUMBIA

Satisfactory Resumption of Work Follows Strike—New Export Market Seen —No Apprehension of Domestic Fuel Shortage.

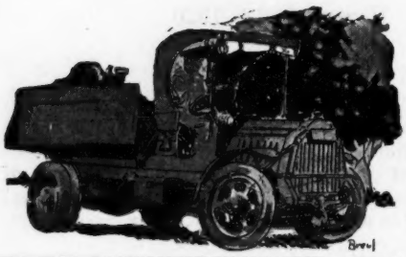
Eastern British Columbia collieries have settled back into normal conditions after October's labor storm. Most of the mines are operating as near to capacity as the available labor permits. In the Crow's Nest field there has been some dissatisfaction among the men because of charges of discrimination in the re-engagement of those who went on strike.

Coal is being shipped probably in as large quantities as ever before in the history of the industry in western Canada. It would appear, therefore, that there is no cause for apprehension of domestic and industrial shortage.

The demand for British Columbia coal outside of the Province continues. One of the latest export orders is for 7,500 tons to be delivered to Auckland, New Zealand. The call for Vancouver Island coal for the mercantile traffic of the Pacific also is increasing; in short there is no lack of market; rather the difficulty of the operators is to get coal out in sufficient quantities.



Mine and Company News



ILLINOIS

The Madison Coal Corporation has purchased from Mr. and Mrs N. E. Kinney, residing near Divernon, the coal rights lying under their land adjacent to the Divernon coal mine. The price specified in the transfer was $24,000.

The Big Muddy Coal Co. is making some extensive improvements at its New Virginia mine in Williamson County. Some of the new outfit includes six mining machines, one haulage motor, a new 250 k.w. generator, 50 pit cars and some general improvements in the top works. The company also has erected 25 new four-room bungalows and expects the tonnage of the mine to be increased 30 or 40 per cent in the near future.

The Southern Gem Coal Co., of Chicago, is having plans prepared for the erection of a new one-story plant addition for coal washing and handling at Pinkneyville, Ill. It will be one-story and is estimated to cost about $100,000, including equipment.

INDIANA

Two men were killed and twenty narrowly escaped death recently in a gas explosion at **Miami Coal Mine No. 8.** The explosion occurred about time the night shift of twenty-two men was ready to come out of the mine. The entry, where the men were killed, was damaged badly by the blast, but the rest of the mine was not affected. The mine employs about 400 men on the day shift, which would have gone into the mine two hours after the accident.

Announcement has been made of the formation of a new coal mining company at Ft. Wayne to be known as the **Service Coal Co.** The directors are Samuel W. Greenland, William H. Snyder and Edward F. Minneker.

Articles of incorporation have been filed by the **Republic Coal Co.,** of Sullivan, a newly organized company formed for the purpose of operating coal mines. The company has a capital stock of $50,000, and the directors are Harry Ward, J. A. Ward, Homer Trimble, Jack Alumbaugh and Bert Stanley.

KENTUCKY

The Michigan State Grange has arranged the details for the purchase of a coal mine at Cumberland, Ky., to supply coal to its members at cost. The initial outlay on the mine will be $1,000,000.

The Tildsley Coal Co., of Cincinnati, has absorbed and taken over the **Smith Gardner Coal Co., of Louisville.** The former will continue the Louisville office as its branch ,with A. H. Gardner in charge as district manager.

It was reported at Ashland, at a merchants dinner recently, that the **C. & O. R.R. was planning to spend $1,500,000** on road improvements in the Ashland Division this year, improving trackage and making arrangements for handling larger tonnage.

The Rockhouse Coal Co., of Hazard, has filed notice of an increase in capital from $150,000 to $250,000.

A number of Missouri capitalists have formed a new organization to be known as the **Kentucky Coal Co.,** with capital of $150,000. R. A. Baker, J. P. Adams, R. H. Bruce and others are interested. The company proposes to develop coal lands immediately above Whitesburg on the Louisville and Nashville main line. A new townsite is a part of the plant. A large part of the product will be coked, a battery of fifty ovens for this purpose to be erected at once.

The Nolansburg Coal Co., Pineville, Ky., capital $40,000, has been chartered by C. Hurst, J. C. Buell and Hattie Hurst.

Three men were burned in the power plant of the **Louisville Gas & Electric Co.,** in flashes from pulverized coal near the pulverizer. Investigation showed that a can of blasting powder had come in with the coal the can being torn to pieces and the powders mixed with the pulverized coal by the pulverizer, and touched off by friction of spark. It is believed that the coal came from the company's own mines at Echols, Ky.

The Tiffany Coal Co. has sold its mining plant and land at Hymar, Knox County, to the Georgia Development Co., at a consideration said to be $150,000.

MONTANA

The Westmont Coal Co. of Darby, has been formed by John F. Waddell, R. B. Nicholson and John Cheney, with a capitalization of $150,000, to mine, buy, sell and deal in coal and coal lands.

OHIO

The Ohio Coal & Iron Co. has been sold to S. Labold and G. E. Carlyle of Portsmouth and D. D. Davis of Oak Hill. Property conveyed includes 7,200 acres in fee simple and the mineral rights to an additional 10,000 acres, and is also rich in deposits of limestone, clay and shale suitable for brick, tile and pottery production. The purchasers are owners of several pottery and brick plants.

PENNSYLVANIA

The Youghiogheny and Ohio Coal Co., owning a dozen or more big mines in Belmont and Jefferson Counties, is spending a considerable sum of money in the development of its coal poperties west of Rayland and they have built a modern model town in which to house their workmen. Glen Robin will have the distinction of being the most up-to-date mining settlement in the whole country.

The Holtwood Coal Co. has purchased land along the Susquehanna River on the Lancaster County shore from midway between Safe Harbor and Shenka Ferry to Pequea for reclamation of 5,000,000 tons of coal deposits in the river at this point. The company has contracted with the Anthracite Production Co. to get the coal from the bed. Sidings and dredges are now in course of construction. With operation in full sway, coal will be removed at the rate of 1,000 tons daily.

Announcement has been made in Uniontown of the sale of approximately 9,000 acres of coal and surface properties, formerly a part of the estate of the late I. W. Semans, to **Hayden, Miller & Co.,** of Cleveland, Ohio, for $1,250,000. The holdings include 5,867 acres of coal and 1,000 acres of surface ground in Greene County, this state; 637 acres of coal and 96 of surface in Harrison County, W. Va.; 110 acres of coal in Marion County, W. Va., and smaller holdings in Fayette and surrounding counties.

Stone Bros., of Uniontown, have purchased a tract of 600 acres of Pittsburgh coal, on Simpson creek in the vicinity of Smith chapel of the M. E church, Harrison County, from John A. Holbert, of Fairview, for more than $500,000. It is reported that rights of way have been procured for a railroad which will be connected with the West Virginia and Pittsburgh division of the B. & O.

Several new mine openings of Somerset County companies have been completed and additional coal is being mined in the field. **The Specht Coal Co.** is shipping coal from one opening with the main opening nearing completion. **The Hillcrest Coal Co.** completed its plant recently. The company plans ten new dwelling houses. **The Triangle Coal Co.** on the west side of Stoney Creek is also ready to open its mine.

Feeling that they were not represented at the recent wage conferences and therefore had not promised to give back pay to their employees to meet the difference in wage before and after the award for the period between April 1 and the wage settlement, the **Scotch Valley Coal Co.,** operating near Hazleton, refused to make the settlement which its non-union workers demanded. As a result, the 150 persons that the company employs called on the United Mine Works of America to help them, declaring that they were locked out for having ventured to make a demand for back pay. The mine workers also are seeking the support of the Department of Labor at Washington.

UTAH

The geologists who were sent by the **Utah State Board of Equalization** to survey the coal veins in Huntington Canyon have completed their task, having followed the veins of coal for 60 miles up and down the canyon. It is expected that a tunnel will be cut through the mountains so as to make the coal accessible from Mohrland. The property is believed to contain many billions of tons of high grade coal. Officials of the **United States Fuel Co.** have already made a survey of the proposed tunnel site, but the company has not yet authorized any statement as to what it will do.

The Mutual Coal Co.'s plant in Carbon County is on the point of completion and coal is expected to be mined by the latter part of November. The working entry into the seam from which the first production will be made has been put in good working condition. The spur from the Rio Grande R.R. and the tipple side tracks are ready for track laying. The company will sell its coal to its own stockholders of whom it is said there are more than 1,700 in Utah and Idaho.

John H. Tonkin of Salt Lake City and **Charles W. Buckley** of Chicago have purchased 320 acres of coal lands near Price, Carbon County, at a cost aggregating $91,-800 from the U. S. Government. Payment has been made to Receiver Heber C. Jex of the local land office. It is claimed that this is the largest sale of government coal lands ever made in this country.

The Mutual Fuel Co. is opening a new mine in the Spring Canyon district, near Raines, Utah. A large crew is at work on the surface getting ready for operations.

WASHINGTON

Joseph Daniels of the University of Washington has prepared a bulletin on the **coking situation on the Pacific coast.** The coking industry of Washington and British Columbia is arousing considerable interest, more particularly in the recent discussions of the question of establishment of iron and steel plants in the Northwest. The increasing interest in the resources of this portion of North America as potential and active sources of industrial raw materials has led to considerable investigation for supplies of coal. The bulletin presents a history of the coking industry together with accumulated information and data obtained from investigations and tests made by the writer and others.

WEST VIRGINIA

The newly organized **Tomkins By-Product Coal Co.** will operate principally in Logan County, where it is believed development work will be initiated at an early date. This enterprise is capitalized at $100,000, those most closely identified with the new company being: D. N. Crawford, W. E. Tomkins, C. R. Conner, C. C. Rand, H. V. Roe, all of Huntington.

The Schell Coal Co. has just been organized for the purpose of handling coal, coke, iron, timber and spoke products, headquarters of the company being at Hubbard in Mineral County. The capital stock of the new company has been fixed at $50,-000, those most largely interested being: J. F. Somerville, N. D. Somerville, J. P. Dorsey all of Cumberland; Elmer Whitaker and Thomas Wilhelm, of Hubbard, W. Va.

The Richland-Marshall Coal Co., Moundsville, has perfected arrangements for the development of its coal property, and the installation of electrical machinery and equipment will be inaugurated at an early date.

The Craig Coal Mining Co., Howesville, recently organized with a capital of $200,000, has perfected plans for the development of 200 acres of coal lands in this locality. W. E. Arnett is president and H. G. Hodges, treasurer, both of Kingwood, West Virginia.

The H. N. Hough Coal Co., Lumberport, recently organized with a capital of $50,000, is planning for extensive development of its coal property to increase the output to 400 tons per day. Equipment for all features of operation will be installed at an early date.

The development of the plans of the **Coalmont Coal & Coke Co.** is proceeding satisfactorily. The aerial tramway and electric light and power plant should be completed this year at the present rate of progress. Four of the tramway cables are stretched and the buckets and other equipment are on the ground. Two large marine boilers will supply power for the electric plant, which will be housed in a new building of pressed brick and steel. Light and power is to be furnished both for the mine plant and for the town. A water system is to be installed.

The Kanawha Cannel Coal Co., organized with a capital of $50,000, has acquired about 250 acres of coal lands in the vicinity of Marmet. This will be developed to produce about 1,000 tons daily.

BRITISH COLUMBIA

The Government's Mine Rescue Station at Fernie is being enlarged to accommodate more adequately the apparatus with which it is equiped and for the training of the miners in its use. This station is provided with about as complete a line of appliances for mine rescue work as can be procured. The Fernie Station was the first in British Columbia and one of the first in the Northwest to be provided with the Gibbs type of breathing apparatus. The Government also maintains at a high state of effiiency, stations at Nanaimo, Cumberland and Merritt. That at Nanaimo has been outfitted with six sets of the Paul apparatus and four sets of the Gibbs; that of Cumberland is equipped with the Draeger apparatus of the 1917 model, but this shortly will be replaced with the modern type, and that of Merritt, which recently was taken over by the Provincial Department of Mines, has six sets of the Draeger and four sets of the Gibbs.

That the **Canadian Collieries (D) Ltd.**, owners of large areas of coal bearing lands on Vancouver Island, are contemplating opening up new sections is indicated by drilling work that is in progress at Sable River, near Union Bay. A number of holes have been driven and the results are said to have been generally satisfactory. Similar explorations are being carried on in other districts, and word of the company's plans with regard to the opening of new mines is being awaited with interest.

ALASKA

A good grade of coal is being mined at the junction of the Healey and Nenana Rivers in Alaska. The mine, which is operated by the **Healey River Coal Corporation**, is close to the Alaskan Ry. near Fairbanks and a tramway is used to deliver the coal to the railway tracks. Some large seams in the Healey River section are to be explored.

Association Activities

Central Pennsylvania Coal Producers' Association

Operators of the Central Pennsylvania field met in Altoona, Pa., on Nov. 4, on the question of pledging themselves not to ask unreasonably high prices. President James H. Allport presided. The meeting was largely attended and partook more of the nature of a gathering of individual operators rather than a meeting of the association. Mr. Allport explained that the purpose of the meeting was to take action in harmony with that taken last week at Cleveland, O., by the National Association. A resolution was prepared and adopted, by which it was resolved:

"That the bituminous coal operators of central Pennsylvania refuse to ask or receive unreasonably high prices for bituminous coal, and further that all unwise practices in the industry, where any such exist, be condemned and eliminated; and

"That in accordance with the action taken by the bituminous coal operators at the Cleveland meeting, that the bituminous coal operators of central Pennsylvania instruct the chairman of this meeting to immediately appoint a committee of ten, of which he shall be one, and of which the secretary of this meeting shall be secretary, said committee to be known as the fair practice committee to function in this district in conjunction with the department of justice to the end set forth in this resolution; and

"Be it further resolved That the committee prepare basic resolutions and a set of rules to govern the action of the committee, and a plan for raising necessary funds to carry on the work of stabilizing the coal mining industry."

William Hahman of Altoona declared that, in his opinion, the resolutions do not mean anything. Mr. Allport replied that unwise practices referred to had to do with the resale of coal. In many cases it is sold from one broker to another, each exacting a toll of profits and it should be the object of the operators to eliminate this waste. Mr. Allport contended that the operators are not permitted to fix prices. Secretary Charles O'Neill, in answer to questions, explained that committees are being named by producers, wholesalers and retailers and that pledges are being given that no resold coal will be handled. This, he explained, will eliminate some of the middlemen.

Pittsburgh Vein Operators' Association of Ohio

The only development of interest in this district is the appointment of The Fair Practices Committee, which was reported following the meeting of bituminous operators in Cleveland on Oct. 26.

They advise they have not received any report of dissatisfaction on account of prices charged, nor failure to secure coal in a satisfactory volume. The feeling prevails that the statements made at the Cleveland meeting and the appointment of the Fair Practices Committee as a result, has eliminated any objectionable conditions, if they existed in this district, before the meeting. It seems probable now that the Committee will not receive any complaints.

Southern Ohio Coal Exchange

Operators in the southern Ohio field met at the Deshler Hotel, Columbus, Ohio, Nov. 4 to take action on the question of fair practice as requested by the Department of Justice at Washington. The meeting was called by the exchange. George H. Barker, vice president of the Maynard Coal Co., was made chairman and W. D. McKinney, secretary of the Southern Ohio Coal Exchange, secretary.

Chairman Barker read the letter from the Department of Justice requesting the meeting and also the result of the recent operators' meeting at Cleveland, when resolutions favoring fair practices were adopted. A statement was made of the really serious situation in domestic circles in Ohio and adjoining states.

Following the adoption of the resolutions Col. Endrakin of Chillicothe described the serious conditions in the coal trade in that section, saying that some consumers had been coming 40 to 50 miles to Chillicothe for coal. Secretary B. F. Nigh of the Michigan-Ohio-Indiana Coal Association urged operators to co-operate toward loading domestic coal to relieve the situation in the three states. A motion was adopted pledging this support.

Western States Retail Coal Merchants' Association

An organization to be known as the Western States Retail Coal Merchants' Association has just been formed with headquaters in Salt Lake City, Utah.

The object of the association is to bring together the various local retail associations of the Far West for the purpose of interchange of ideas and co-operation. The states who will be charter members are Utah, Oregon, Idaho and California. Washington and Nevada have yet to be heard from.

Officers have been elected as follows: President, J. Calvin Ewing, San Francisco; Vice-president, J. R. Slayden, Pasadena, Cal.; W. C. Holman, Portland, Ore.; C. E. Sharp, Boise, Idaho; F. B. Kimball, Salt Lake City, Secretary, W. C. Stark, Salt Lake City.

Recent Patents

Governing Fuel Pump.—Adolph F. Christmas, Easton, Pa., assignor to Ingersoll-Rand Co., Jersey City, N. J., 1,352,050. Sept. 7, 1920. Filed Sept. 28, 1918. Serial No. 256,129.

Mining Machine.—Albert Ball, Claremont, N. H., assignor by mesne assignments to The Jeffrey Manufacturing Co., Columbus, Ohio. 1,352,169. Sept. 7, 1920. Filed July 26, 1909. Serial No. 509,579.

Anemometer.—Sydney George Starling, Forest Gate, and A. J. Hughes, London, England, assignors to Henry Hughes & Son, Ltd., London, England. 1,352,391. Sept. 7, 1920. Filed Apr. 10, 1919. Serial No. 289,066.

Briquet Drier.—Robert S. Plummer, Philadelpha, Pa., assignor to American Briquet Co., Philadelphia, Pa., 1,352,377. Sept. 7, 1920. Filed Sept. 11, 1919. Serial No. 323,172.

Traffic News

Vigorous protests will be made at the I. C. C. hearing on Nov. 16 to the proposed increases in **trimming and dumping charges at Hampton Roads.** The proposed increases place the charge for this service at Hampton Roads eight cents above the charge at Philadelphia and Baltimore. An addition to the protest of the coal operators will be that of the steamship interests generally, including the United States Shipping Board.

In the complaint of the **Alden Coal Co.** of Matherville, Ill., the I. C. C. has decided that the rates on coal from Matherville to Hopewell, Ill., initiated by the Director-General of Railroads were unreasonable, but denies reparation because the complainant is not the real party in interest. The Commission says the rates were unreasonable because they exceeded $1 per net ton.

In the complaint of the Central Pennsylvania Lumber Co., the I. C. C. decides that the rates on coal from Lucinda, Pa., via Waverly, N. Y., to Ricketts, Pa., are unjust and unreasonable, prescribes reasonable maximum rate for the future and awards the complainant reparation.

Indiana Rates.—The trade here will be considerably affected by a recent intrastate increase in freight rates, amounting to about 33⅓ per cent. The increase was granted by the Indiana Public Service Commission after the steam roads had petitioned for an increase of 40 per cent. Because of the fact that Indianapolis is a big distributing point for the greater portion of Indiana, the distributing houses of Indianapolis have been greatly affected. Some of the industries through appealing to the commission saved themselves much added expense when in cases like the brick manufacturers, no increase was allowed and the sand and gravel industry intrastate rates were increased only 11 per cent.

Twin Cities.—The stringent coal situatin has called attention anew to the waterway project to the Atlantic via the Welland canal and the St. Lawrence river. It is pointed out that this would release cars which are now tied up to move products of the Northwest. The through waterway would allow the flour and other products of this section to go by water, and the cars now used for moving them would be available for the coal and other trades.

Louisville & Nashville R.R.—In the plea of the Louisville & Nashville R.R. for an increase in coal rates from mines in Kentucky, Tennessee and West Virginia to points North and Northwest, the railroad company has asked that its rates from and to the points specified be increased from 33⅓ per cent, ordered effective Aug. 25, to 40 per cent, as given to the Chesapeake & Ohio R.R., a competing line. It was contended by the Kentucky coal operators that the Illinois mines would be placed in direct competition with the Kentucky fields should the increase be granted. A decision will be rendered after the Interstate Commerce Commission reviews the testimony taken.

Personals

William B. Lloyd, of Wm. B. Lloyd Co., Philadelphia, Pa., took advantage of a lull in the retail trade to visit the anthracite region. He spent several days in the vicinity of Mauch Chunk and reports the Lehigh field working to capacity, so far as can be seen.

Work has been started on the rebuilding of the coal yard for **A. G. Solomon**, Norristown, Pa., dealer. The work is to be completed within two months and when finished will be double the capacity of the former yard.

N. W. Garrett has joined the force of the Irwin Valley Gas Coal Co., located in the Widener Building, Philadelphia, Pa. Mr. Garrett has had long experience in the bituminous trade and was formerly connected with the well known house of B. Nicoll & Co.

T. C. Hughes was a recent visitor in New York City. Mr. Hughes has been actively connected with the coal mining industry for many years, at present being president of the Kentucky Collieries of Pineville, Ky. While in this vicinity, he acquired much information that will be valuable in the development of his mines and sale of the coal.

M. L. Burtles has been appointed Huntington representative of the Old Dominion Coal Corporation of Charleston, W. Va., succeeding **H. A. Christian**, transferred to Cincinnati. Mr. Burtles was formerly connected with the Amherst Fuel Co. of Lundale.

Four additional representatives of the fair practice committee of northern West Virginia operators have been selected to act in the following group of counties in northern West Virginia: **J. J. Phileen**, secretary of the Chamber of Commerce of Clarksburg for the counties of Harrison, Doddridge, Lewis, Gilmer and Calhoun; **E. M. Grant** of Morgantown, for the counties of Marion, Monongalia and Preston; **Charles Ritter**, secretary of the Business Men's Association of Elkins, for the counties of Randolph, Taylor, Upshur and Barbour; **William Hesket**, of Piedmont, for the counties of Mineral, Hampshire, Hardy, Grant Tucker and Pendleton.

Thos. F. McGowan, retail coal dealer in Philadelphia, was successful at the recent election in his candidacy as a membe of the State legislature, receiving an extraordinarily heavy vote.

Geo. W. Edmonds, founder of the old Geo W. Edmonds & Co. retail business until its consolidation with the Newton concern, was at the last election chosen for the fourth time to represent the Fourth District of Philadelphia County in the U. S. Congress. Mr. Edmunds is in receipt of the congratulations of his many friends in the trade.

F. J. Ginn has been appointed traffic director of the National Committee on Gas and Electric Service.

F. B. Layton, for some time vice-president of the Bader Coal Co., has organized an independent company, under the name of the F. B. Layton Coal Co., with office in Milk St., Boston, Mass.; capital stock, $50,000.

W. J. Davis, New Straitsville, Ohio, coal operator and former county Republican chairman, was rendered unconscious and seriously injured, when he fell from a cut of cars at his mine.

W. N. Wetzel, former superintendent of mines for Utah Fuel Co. at Castle Gate and at Sunnyside, is coming back to Carbon County, where he will take a position as general superintendent for the Carbon Fuel Co.

Henry S. Fleming, consulting engineer, of New York, for several years chairman of the executive of the Canadian Collieries (Dunsmuir) Ltd., operating collieries on Vancouver Island, British Columbia, has resigned as president of that company and its allied organizations, the board of directors and the bondholders' committee, having decided that the executive management shall in future be wholly in British Columbia.

D. S. Riddle of the Riddle Coal Co., Chattanooga, Tenn., visited New York City recently, following the Cleveland operators' meeting, which he attended. Mr. Riddle's company conducts an extensive jobbing business in the South, with mining connections in Kentucky.

Paul Pool, of Johnstown, Pa., for four years assistant superintendent of the Cambria Steel Co.'s coke plant at Franklin, Cambria County, resigned Nov. 1 to accept a position as superintendent of the by-product coke plant of the Semet-Solvay Co. at Detroit.

G. Allen Crane, mining engineer, announces that he has established offices at Vancouver, B. C., with a view to offering his professional services for consulting, reporting, developing and administrative work in all classes of mining.

A. G. Gutheim, of Washington, representative of the American Railroad Association, was in the Twin Cities recently on a visit. He stated that there would be an early relief from the transportation difficulties which have caused so much grief to the coal trade.

J. M. Savage, for some years General Manager with headquarters at Victoria, B. C., of the Canadian Collieries (D) Ltd., has been appointed Chairman of the Company's Executive, vice **Henry S. Fleming**, resigned.

A. F. Elliott, who for thirteen years has been chief electrical superintendent of the coal mines of the Tennessee Coal, Iron and Railroad Co., and has been identified with the growth of the mines of that company, has resigned.

Prominently among the Central Pennsylvania coal operators who attended the recent meeting of the National Coal Association at Cleveland, Ohio, were **H. J. Meehan** and **Enoch Carver**, of the firm of J. C. Cosgrove & Co., of Johnstown.

R. B. Mitchell, general superintendent of the Illinois mines of Cosgrove & Co., Johnstown, Pa., is a visitor in Johnstown. He is head of the Sandford Coal Co., the company recently installing a new tipple which has increased the output to 2,500 tons daily.

Thomas M. Davis, superintendent of Mine No. 6 of the Peabody Coal Co., located at Springfield, Ill., has been transferred to Mine No. 7, at Kincaid, Ill.

E. J. Alexander, after serving for fifteeen years as fuel agent for the Chicago and Eastern Illinois R.R., has been tendered a position as vice-president of the Ender Coal & Coke Co., Fisher Bldg., Chicago.

Mr. J. Noble Snider, having returned to the service of the N. Y. C. R.R., was appointed Coal Freight Agent, with headquarters at New York.

The American Export and Inland Coal Corporation, which was organized not long ago, has announced the appointment of **W. A. Leigh** as its Michigan representative.

J. J. Snively has accepted an important position with A. R. Hamilton & Co. Mr. Snively for a time was connected with the Northern West Virginia Coal Operators' Association.

Industrial News

Philadelphia, Pa.—The Cortright Coal Co., located in the Pennsylvania Building, have succeeded in getting additional floor space for their business which has grown rapidly in the past several years. The new space doubles their former capacity and gives them ample room for housing their sales department as well as the various underlying companies of the concern, of which H. B. Cortright is president and H. Bartram Cornog vice president.

Clarksburg, W. Va.—Jewett, Bigelow & Brooks, coal brokers, with general offices in Detroit, have opened an office in Clarksburg with Loring J. Smith as representative. The company plans to open an office in Fairmont also just as soon as a location can be obtained. The Fairmont representative of the company is Fred M. Bennett, Cincinnati.

Philadelphia, Pa.—The Phila. & Reading Ry., using approximately 3,000,000 tons of coal per year, has entered upon a fuel conservation plan. Mr. Charles P. Dampman has been appointed supervisor of fuel conservation, and has issued a pamphlet covering the various ways in which coal can be saved. Particular attention is called to the manner in coaling the locomotives, but stress is also being laid upon overloading of tanks, coal lost in transit, etc. The committee plan has been adopted to make the movement effective, there being committees to oversee the plan on each division, as well as sub-committees in round-houses and shops. A saving of 420,000 tons has been set as a mark, which would mean about 200 pounds per locomotive mile.

Pittsburgh, Pa.—The fair practice committee of the Pittsburgh district coal operators has sent a circular to all operators of the Pittsburgh Federal district urging operators to do everything in their power to meet the demands for coal for domestic use. They are requested to advise the secretary of the committee, R. W. Gardiner, as to what coal they have available.

New York, N. Y.—C. W. Hunt Engineering Corporation has been formed with offices at 143 Liberty St., New York City, to handle sales entailing engineering in connection with the Hunt products and all engineering services previously performed by the C. W. Hunt Co., Inc.

Lansing, Mich.—The fourth district of the Michigan Coal Merchants' Association has been organized here. William B. Smith, state association secretary, was here from Detroit. The fourth district will comprise dealers in Ingham, Livingston, Eaton and Shiawasse Counties. Twenty-five representatives from the various towns were present at the meeting.

Hartford, Conn.—The J. B. Engineering Sales Co., has ben appointed Connecticut sales agents of the Conveyors Corporation of America, formerly American Steam Conveyor Corporation. Offices are located at 60 Prospect St., Hartford, Conn.

Obituary

Anthony LePage of Clinton, a coal operator, was killed recently, when the automobile in which he was riding was struck by a passenger train at a crossing east of Clinton. LePage was alone in the car and was going to Terre Haute.

B. J. Libby, well known in the fuel business of South Minneapolis, died recently after a brief illness. He had been confined to a wheel-chair for nearly 40 years, having been left a cripple when about 16. Despite this, he established a fuel business which he directed from his chair and conducted it successfully until his death.

A. H. Hamilton, consulting mechanical engineer, died in Vancouver, B. C., after a brief illness. For many years he was master mechanic for the Western Fuel Co. of San Francisco, later with the Canadian Collieries, Ltd.

George W. Stevens, President of the Chesapeake & Ohio R.R., dropped dead at the Greenbrier Hotel, White Sulphur Springs, recently. Mr. Stevens was active in the development of the coal fields of West Virginia, and during his term of office as President of the C. & O. an unusually large number of branch lines were built to aid in the development of the State's natural resources.

Coming Meetings

Illinois Mining Institute will hold its next meeting on Nov. 20 at Springfield, Ill. Secretary Martin Bolt, Springfield, Ill.

Coal Mining Institute of America will holds its annual meeting Dec. 8, 9 and 10, 1920, in the Chamber of Commerce Auditorium, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., Chamber of Commerce Bldg., Pittsburgh, Pa.

The American Society of Mechanical Engineers will hold its annual meeting Dec. 7, 8, 9 and 10 in the Engineering Societies Building, 29 West 39th St., New York City.

Taylor Society will hold its annual meeting Dec. 2, 3 and 4 in the Engineering Societies Building, 29 West 39th Street, New ork City. This society tends to promote the science and the art of administration and of management. Managing director, H. S. Person, 29 West 39th Street, New York City.

The Wholesale Coal Trade Association of New York, Inc., will hold its annual meeting in New York City Jan. 18, 1921. Secretary, Charles S. Allen, 90 West Street, New York City.

American Society of Mechanical Engineers' annual meeting will be held in the Engineering Societies Building, 29 West 39th Street, New York City, Dec. 7 to 10 inclusive. Secretary, Calvin W. Rice, 29 West 39th Street, New York City.

Illinois Mining Institute will holds its annual meeting Nov. 20 at Springfield Ill. Secretary, Martin Bolt, 1600 College Street, Springfield, Ill.

West Virginia Coal Mining Institute will hold its annual meeting Dec. 7 and 8, at McLure Hotel, Wheeling, W. Va. Secretary, R. E. Sherwood, 1001 Kanawha Bank Building, Charleston, W. Va.